United States Court of Appeals
for the
District of Columbia Circuit

TRANSCRIPT OF RECORD

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Court of Appeals of the District of Columbia

APRIL TERM, 1928

No. 4835.

597

SPECIAL CALENDAR.

TECHNICAL RADIO LABORATORY, A CORPORATION, APPELLANT,

vs.

THE FEDERAL RADIO COMMISSION.

APPEAL FROM THE FEDERAL RADIO COMMISSION.

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Court of Appeals of the District of Columbia

No. 4835.

Technical Radio Laboratory, a Corporation, Operating Station WTRL, Applicant-Appellant,

vs.

The Federal Radio Commission, Appellee.

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1 In the Court of Appeals of the District of Columbia.

No. 4835.

Radio Commission No. —.

Technical Radio Laboratory, a Corporation, Operating Station WTRL, Applicant-Appellant,

vs.

The Federal Radio Commission, Appellee.

Notice of Appeal to the Court of Appeals of the District of Columbia and Reasons Therefor.

Now comes Technical Radio Laboratory, operating Station WTRL, by Godfrey L. Munter, its attorney of record herein and respectfully says that it is aggrieved by the decision of the Federal Radio Commission rendered herein against it on August 23, 1928, effective at three o'clock A. M. on September 1st, 1928, and gives notice of its appeal therefrom to the Court of Appeals of the District of Columbia, assigning in support thereof the following reasons:

1. The Commission erred in not granting the application for a renewal for applicant's license, and in prohibiting it to broadcast after three o'clock A. M., September 1st, 1928, because the said Commission did not have the power to

withhold the said application and order this applicant off the air.

2. The Commission erred in not granting the application for the renewal of the license, and in ordering the applicant off the air as of September 1st, 1928, because it acted contrary to law, particularly Section 4 of the Federal Radio Act, in that appellant did not commit any acts under said law to justify the said Commission in withholding appellant's license.

3. The action of the Commission is confiscatory, and destroys the value of its property and property rights in and to the said broadcasting license, without due process of law and without just compensation.

4. The Commission erred in its decision because the
2 undisputed and uncontradicted evidence shows that
it is to the public convenience, interest and/or necessity of Bergen County, New Jersey, and particularly Midland Park, where the station is located, that appellant be permitted to continue with its broadcasting programs.

5. The Commission erred because its decision is not justified by the law as applied to the facts and circumstances of this case.

6. The Commission erred because its decision is arbitrary, biased and prejudiced, and is a continuation of its policy of persecution of appellant by Commissioner Orestes H. Caldwell, a member of the appellee Commission, in charge of the so-called "First Zone," within which appellant station is located, as is manifested by the circulation in the public hearing room of the Commission, at the time of its hearing of this appellant's application, of a vicious and vitriolic historical attack upon this station, as more fully appears from the exhibits offered in evidence at the said hearing, and now in possession of the said Commission.

7. The Commission erred in that it prejudged and predetermined its decision without first according to the appellant the right to be judged before an impartial and open-minded tribunal.

8. The Commission erred in not granting certain motions made at the beginning of the hearing, which motions are in the record and in possession of the appellee herein.

9. The Commission erred in its decision because it denied the appellant the fundamental and constitutional right to be apprised with some particularity prior to the hearing

of the charges against it, so that appellant might prepare itself accordingly and be in a position to defend itself.

10. The hearing in question and the decision based thereon is null and void for the reason that this appellant was deprived of its property without due process of law; that the hearing was oppressive, tyrannical and contrary to all laws of procedure and evidence, particularly because one hundred and sixty-two (162) stations, located in all sections of the United States of America were ordered to appear before the said Commission at Washington,
3 D. C., July 9, 1928, at ten o'clock A. M. under its general order number 32 reading as follows:

> "The Commission after an examination of the application for renewal of station licenses of the below named stations has not been satisfied that public interest, convenience or necessity will be served by granting these applications.
>
> "It extends for a period of sixty days the existing licenses of these stations subject to all modifications and extensions, to terminate at three o'clock a. m., August 1st, 1928.
>
> "The Commission fixes Monday, July 9th, ten o'clock a. m., in its offices in Washington, D. C., as the time and place for a hearing for each of these applications.
>
> "The stations to which this order applies are as follows:
>
> "To station WKBN and others.
>
> "FEDERAL RADIO COMMISSION,
> By IRA E. ROBINSON,
> *Chairman.*"

that the said order is in effect a rule to show cause upon this appellant and the other one hundred and sixty-one (161) stations, and no charges or specifications were furnished upon any of the said stations; that in view of the size, location and capital invested it was an undue hardship upon this appellant to bring its witnesses from Midland Park, New Jersey to Washington, D. C. from time to time to testify before the Commission, and inasmuch as the Commission had furnished no charges or specifications thereof this appellant was not given an opportunity to obtain the depositions or other proper evidentiary documents of the people in and around Midland Park, and Bergen County, New Jersey prior to the date of the hearing, so as to show that the public convenience, interest and/or necessity required the continuance of the station in question.

4 11. The decision is null and void for the reason that the Commission was not properly composed at the time of the hearing of this case. The Commission consists of five members and only four participated in the hearing, the fifth member having seen fit to withdraw.

12. The Commission erred in the exclusion of evidence offered by the appellant consisting of about one hundred and fifty (150) letters and testimonials, and in admitting evidence objected to by the appellant consisting of alleged agents' reports.

13. Appellant hereby reserves the right to adduce additional evidence and hereby calls upon the appellee to furnish complete record of this case, together with the exhibits offered and received in evidence at the hearing.

TECHNICAL RADIO LABORATORY,
By GODFREY L. MUNTER,
Attorney.

Washington, D. C., September 18, 1928.

DISTRICT OF COLUMBIA, *ss:*

Godfrey L. Munter, being first duly sworn according to law, on oath deposes and says that he has read the aforegoing notice of appeal by him subscribed, and knows the contents thereof; that the things and facts therein stated as of his own knowledge are true and those stated upon information and belief he believes to be true.

GODFREY L. MUNTER.

Subscribed and sworn to before me this 19th day of September, 1928.

[SEAL.] ADELAIDE SPRECKELMYER,
Notary Public.

To the Federal Radio Commission,
Washington, D. C.

Please take notice that the foregoing notice of appeal and reasons for appeal will be filed forthwith in the Court of Appeals, District of Columbia, pursuant to the provisions of the Radio Act of February 23, 1927.

GODFREY L. MUNTER,
Attorney for Appellant.

5 [Endorsed:] No. 4835. Technical Radio Laboratory, a corporation, operating Station WTRL, applicant-appellant, vs. The Federal Radio Commission, appellee. Notice of appeal to the Court of Appeals of the District of Columbia and reasons therefor. A certified copy of the within notice of appeal and reasons received this 19 day of September, 1928. Federal Radio Commission by W. J. Clearman, acting secretary. Court of Appeals, District of Columbia. Filed Sep. 19, 1928. Henry W. Hodges, clerk.

6 In the Court of Appeals of the District of Columbia.

No. 4835.

TECHNICAL RADIO LABORATORY, a Corporation, Operating Station WTRL, Applicant-Appellant,

v.

THE FEDERAL RADIO COMMISSION, Appellee.

PROCEEDINGS, STATEMENT OF FACTS, AND GROUNDS FOR DECISION.

Proceedings.

This is a proceeding under the Radio Act, 1927, approved February 23, 1927, and the amendment thereto, approved March 28, 1928, and is before the Court by virtue of Section 16, of said Act. The applicant and appellant herein is the Technical Radio Laboratory.

This appeal is from the refusal, by the Federal Radio Commission, of an application for renewal of a radio broadcasting station license, made by the applicant herein.

On December 17, 1926, the Technical Radio Laboratory filed with the Department of Commerce, an application for a radio station license (File No. 1); this station being located at 28 Sicomac Avenue, Midland Park, New Jersey, and operating as a broadcasting station, time unlimited, and classified as a limited commercial "A" station. Accompanying this application was a waiver signed by H. C. Hogencamp for the Technical Radio Laboratory; this waiver being required by the Joint Resolution of Congress, approved December 8, 1926. By the terms of this waiver

"The applicant hereby waives any right or any claim of right, as against the United States, to any wave length, or to the use of the ether in radio transmission, because of previous license to use the same or because of the use thereof." (File No. 2.)

7 On December 18, 1926, the Secretary of Commerce issued a license to operate a radio transmitting station to the Technical Radio Laboratory (H. C. Hogencamp) for the purpose of

"Carrying on of general broadcasting for public information, instruction, amusement or entertainment"

at a designated wave length of 1070 kilocycles (280.2 meters) the time of operation being unlimited. Said license by the terms thereof was to continue in force for three months from its date. (File No. 3.)

Pursuant to General Order No. 5 of the Federal Radio Commission (File No. 4) the applicant on April 22, 1927, filed with the Federal Radio Commission an application for a radio station license. (File No. 5.)

On April 26, 1927, applicant was authorized by the Federal Radio Commission to operate its station with 15 watts power and at a frequency of 930 kilocycles (322.4 meters) until further orders from the Commission. (File No. 6.)

On May 3, 1927, applicant was authorized to operate its station on a frequency of 1250 kilocycles (239.9 meters). This authorization further provided as follows:

"This extension is not to be considered as a finding that your operation is in the public interest, convenience or necessity." (File No. 7.)

Under date of June 1, 1927, applicant was authorized to operate its station for a term ending July 31, 1927, on a frequency of 1450 kilocycles (wave length 206.8 meters), power of 15 watts, and on a time-sharing basis with WMRJ and WHPP. (File No. 8.)

This authorization terminated the operation of applicant's station under former temporary permit, General Order No. 11. (File No. 9.)

8 On May 28, 1927, the Commission ordered (General Order No. 13) that all broadcasting licenses issued as of June 1, 1927, should continue in effect, unless revoked or modified, for a period of sixty days after June 15, 1927. (File No. 10.)

On August 6, 1927, applicant filed its application for a renewal of license. (File No. 11.)

On August 8, 1927, the license was extended and renewed from its date of expiration until October 14, 1927. (File No. 12.)

By General Order No. 18, dated October 12, 1927, said license was continued in force until October 31, 1927. (File No. 13.)

On October 13, 1927, applicant filed its application for an extension of license. (File No. 14.)

On October 24, 1927, said license was extended and renewed by the Commission from its date of expiration until December 31, 1927. (File No. 15.)

Informal requests were made by applicant under dates of February 2, 1927, June 8, 1927, and November 7, 1927, for increases in power and changes in frequency. (File Nos. 1 to 56 inclusive.)

By General Order No. 21, dated December 1, 1927, the Commission extended all existing station broadcasting licenses and renewals to January 31, 1928. (File No. 16.)

On January 16, 1928, applicant filed its application for a renewal of its radio broadcasting station license. (File No. 17.)

Under date of January 16, 1928, the Commission issued its General Order No. 22, by the terms of which all existing station broadcasting licenses and renewals were extended until March 1, 1928. (File No. 18.)

Under date of February 20, 1928, the Commission, by its General Order No. 23, extended all existing station broadcasting licenses, providing for termination on April 1, 1928. (File No. 19.)

9 Under date of March 27, 1928, by its General Order No. 25, the Commission extended existing station broadcasting licenses to terminate on May 1, 1928. (File No. 20.)

On April 20, 1928, by its General Order No. 27, the Commission provided that all existing licenses to broadcast be extended to terminate June 1, 1928. (File No. 21.)

On May 25, 1928, the Commission, after an examination of the application for renewal of station license of the applicant herein, not being satisfied that public interest, convenience or necessity would be served by the granting of this application, ordered that a hearing be held on said application on July 9, 1928, at its offices in Washington, D. C. In this Order the Commission extended for a period of sixty days, the existing license and provided for its termination on August 1, 1928. (File No. 22.)

Under date of May 25, 1928, applicant was duly notified of said hearing. (File No. 23.)

On July 11, 1928, a hearing was held before the Federal Radio Commission and continued on July 18, 1928. At said times applicant was represented by counsel and evidence introduced on its behalf and on behalf of the Federal Radio Commission. (File No. 24-A, 24-B.)

On July 18, 1928, said hearing was adjourned to July 23, 1928, at which time the Commission adduced engineering testimony of a general nature, applicable to the whole broadcasting field and with respect to the operation and effect of operation of broadcasting stations generally; the same being incorporated as evidence in the instant hearing, of which hearing and incorporation applicant had due notice.

Thereafter the Commission, Commissioner Caldwell not sitting, considered the evidence and the arguments presented to it in this proceeding, and found, under date of
August 23, 1928, that public interest, convenience or
10 necessity would not be served by the granting of the
application herein, and denied the same. (File No.
25.)

On September 19, 1928, applicant filed with this Commission its Notice of Appeal to the Court of Appeals of the District of Columbia from the decision of this Commission.

Statement of Facts.

This proceeding is upon the application of the Technical Radio Laboratory, a corporation organized under the laws of the State of New Jersey, for renewal of a radio broadcasting station license. Said application was dated January 14, 1928 and filed with this Commission January 16, 1928.

This station was originally licensed by the Secretary of Commerce on December 18, 1926. Its call letters are WTRL. It is located at Midland Park, Bergen County, New Jersey.

In the application for license hereinbefore mentioned, the applicant is required to specify the actual periods the station is operated; to attach a printed program of the week immediately preceeding the date of the application, and to set forth the average amount of time devoted to entertainment, religious, commercial, educational, agricultural and fraternal services. Applicant failed to make the required statements, but instead inserted in the application

"It of course is understood that when our wave length is raised and our power increased this station will operate every minute of the evening and day as it is impossible to have a full program on the wave length and the amount of power now used by this station."

The application is signed for the Technical Radio Laboratory, by H. C. Hogencamp, who is president of the corporation, and operator of the station.

Applicant is a subsidiary of D. W. May, Inc., the parent company being engaged in the business of distributing radio receiving sets. The application, made under
11 oath, does not indicate this relationship, although required.

D. Winthrop May is Secretary and General Manager of the applicant corporation and has held stock, or is now holding stock in at least two other broadcasting stations, namely, WEWM and WGCP, his testimony at different times being conflicting on this point.

Said May appears to have financed the applicant station from the beginning. From the testimony of the said D. Winthrop May it appears that this station used no paid talent for its programs and that most of its programs were reproduced from phonographic records; that the programs of this station in the past have consisted of sport talks, musical programs, patriotic programs, religious programs and technical programs. Witness was unable to identity any of the speakers, musicians or organizations on any program.

It appears, also, from the testimony of this witness that his duties as General Manager did not keep him closely in contact with the operation of the station. In reply to the question

"How many hours a week would you say the station has been operated"

he answered

"It is pretty hard for me to answer. I might say this. This station we have not tried to put on the air on what you might call a regular commercial basis. In the first place, the station is over in Midland Park, New Jersey, at a point where it would be impossible to bring talent into that community at any regular intervals, because it is off the main thoroughfares. That is the reason that about two years ago, as your records will show, we asked for an increase in power at that time, and you may have later had some additional requests. We wanted to move the station to a more advantageous point where it could be used on a regular commercial basis. We have operated the station regularly. We have given programs. They surely do not compare to WEAF; I do not make any such claim, because you cannot do it on 15 watts."

12 This station has not utilized all the time permitted to it under the terms of its license. It has not maintained a schedule with which the public is familiar, the reason given for this being that the station is located at a place where there is no way of publishing the program. It has not maintained a regular schedule of programs.

An inspection of this station on May 17, 1928, by Charles P. Manning, in the performance of his duty as Radio Inspector for the Department of Commerce, revealed that the station studio was located in the parlor of a residence; that the transmitting apparatus was located in a house in the rear of the residence; that the equipment was not in working order at the time of inspection, 3 meters having been removed. The transmitting apparatus was described as being covered with dirt and showing no indications that it had been operated recently. It appears that the motor and generators were located in a room approximately 12′x15′ in size and were enclosed by a screen; part of the room being used for the charging of storage batteries. Conditions within the transmitting room indicated its use for the housing of innumerable puppies.

Other evidence was adduced to the effect that inspectors of the Department of Commerce had never been able to maintain a check on the frequency used for this station because they were not able to find it "on the air."

The station operator and president of the corporation, H. C. Hogencamp, was not present at the time of the inspection. He did not appear as a witness before the Commission, but submitted affidavits, very indefinite as to content, to the effect that the station had been "on the air" from December 18, 1926 to the date of his affidavit, July 10, 1928, on an average of three times a week with various kinds of programs of interest to pepole in and about Midland Park, New Jersey. The nature of the programs and the persons
furnishing the same were not specified. The lack of
13 definiteness with respect to the nature of the pro-
grams and time of operation in the affidavits of
Hogencamp, and the testimony and affidavit of witness May, together with the demeanor of the latter when appearing as a witness, leads the Commission to conclude that this station has not been operating with any degree of regularity or providing the public in its vicinity with a suitable type of program.

A further indication of lack of interest in the particular community, is shown by the fact that this station has, at various times in the past, made informal application to remove the same from Midland Park, New Jersey, to other points. The indefinite record of past programs indicates that these programs were of a general nature and not local in character.

The President of the applicant corporation, who is also the operator of the station, is characterized by the nation's General Manager

"Our operator is somewhat of a "ham." In other words, when he is not operating the station he is doing experimental work. He also has charged storage batteries for the station and takes a few jobs in this other room. He had three pups while he was not working in there for a couple of days, when the station was not on the air, and he said he had a box there with the pups in the box. I would like to know what is wrong about that operator having a couple of pups in there." (Pages 27 and 28 Transcript of testimony of July 11, 1928).

Evidence relating to the engineering principles involved in radio communications, with particular reference to broadcasting and the various factors governing the use of radio, was presented by competent and qualified engineers. Certain of these principles and facts are herein set forth for the purpose of showing the extent of the influence of physical factors in this form of communication.

Electrically produced impulses or eminations, known as electromagnetic waves, convey the communications. These
eminations are produced at the rate of from 10,000
14 to 23,000,000 per second for communication purposes.

For convenience these numbers are generally referred to in terms of units of 1,000, i. e. kilocycles. Each emination or wave is the result of the flow of an electric current through a complete cycle. As a method of expressing the frequency of these eminations, the term "kilocycles per second" (kc/s) is used. The frequency band adaptable for communication purposes at the present stage of the art extends from 10 kc/s to 23,000 kc/s.

By the terms of the International Radio Telegraph Convention, effective January 1, 1929, to which Convention the United States is a party, those frequencies between 550 and 1,500 kc/s are allocated to the service of broadcasting; this band of frequencies being particularly adapted to this form of communication.

Due to the fact that electromagnetic eminations lose their effectiveness as communicating media when they are produced at two or more points at the same or neighboring frequencies, it has been necessary to devise a channelling system whereby an adequate separation of frequencies as between stations is provided.

The present standard in the broadcasting band, as adopted by this Commission, allows for a separation of 10 kc/s, i. e. channels 10 kc/s in width. This standard accords with sound engineering principles and has been adopted by many other nations. It is recognized that even this frequency separation does not eliminate interference entirely but does allow for the operation of a larger number of stations than would be possible under a system of wider channels.

Under this system of channelling, there are 96 channels available for broadcasting within the band of frequencies allocated to that use. Of these channels six have been assigned to the exclusive use of Canadian stations and twelve are shared by stations of the United States and Canada.

15 It is possible for stations operating with relatively low power to use the same channels without substantial interference providing they have a sufficient geographic separation, the factors influencing the amount of interference of stations on the same channel being in part, the power used by the stations and the extent of their separation.

The power of the station also determines to a certain extent the area for which that station can provide services to its listeners. Engineers who appeared as witnesses at the hearing involving the application now in question testified to the following as illustrative of the areas covered by stations of given power during average conditions in the winter months during evening hours:

Power of station.	Radius of area of very good service (city dweller).	Radius of area of good service (suburban dweller).	Radius of area of fair service (rural dweller).	Radius of nuisance area.
30 watts	2 miles	10 miles	100 miles	300 miles
100 “	3 “	15 “	150 “	450 “
500 “	6 “	30 “	350 “	900 “
1,000 “	9 “	45 “	450 “	1,300 “
5,000 “	20 “	100 “	1,000 “	3,000 “
50,000 “	60 “	300 “	3,000 “	Beyond limits of country.

Beyond the service area of the station there exists a so-called nuisance area. If this area coincides with the service area of other stations using the same or approximately the same frequencies, interference is set up which is destructive to good reception.

These factors must be taken into consideration in assigning stations to operate on the same channel of frequencies and sufficient geographic separation made to minimize such interference.

It should be considered that the figures given above are not operative under all conditions, but by reason of the fact that the factors influencing transmission, attenuation and reception are many, variable, and to a certain extent, unaccounted for, an absolute standard cannot be erected or expressed.

16 The number of stations that may operate simultaneously is limited also by the mechanical limitations of receiving and transmitting sets.

Without going further into technical facts, it is apparent that provision cannot be made for all stations desiring to broadcast. It is a matter of common knowledge that this Commission was created, in part, to remedy the chaotic conditions existing in the broadcasting field at the time of the enactment of the Radio Act of 1927. This condition was due, in part, to the presence of a greater number of stations than could be operated effectively in the public interest.

By assigning a limited number of stations to the same channel, when substantial interference would not be caused thereby, and by providing for operation of stations on a time-sharing basis, this Commission has endeavored to meet the demands of broadcasters, and at the same time protect the listening public from the chaos, and confusion resulting from interfering stations. The demands of all broadcasters and prospective broadcasters cannot be met, if the interests of the public are to be protected.

There were in the United States, at the time the application herein was considered, a total of 673 stations, ranging in power from 5 watts to 50,000 watts, and many pending applications.

Midland Park, New Jersey, the location of applicant's station, now receives as extensive a bradcasting service of high quality as any other section of the country.

Grounds for Decision.

This Commission considers that the Technical Radio Laboratory, applicant herein, and all other stations operating under Government license, are trustees of public property, this property to be used for the benefit of the public; that the trust so imposed upon this applicant and assumed by it has not been fully kept, in that there have been
17 no regular hours of operation; the programs have not been of the standard to which the public is accustomed, particularly in view of the extensive use of com-

mercial phonograph records; that operations have been suspended entirely at times. The condition of the station and the attitude and demeanor of the proprietors are not indicative of a desire to serve the public, but evidences a lack of qualifications for operating the station.

This Commission further considers that the failure of applicant to report its programs, as required by law, is, alone, sufficient cause for a denial of said application.

This Commission further considers that the applicant has made no showing that public interest, convenience, or necessity would be served by the granting of said application.

This Commission does not view with favor an apparent attempt to make use of the licensing privilege for the purpose of establishing rights, without the assumption and recognition of the public duties involved in the use of such privilege.

The contention of applicant that the ability of this station to function has been greatly impaired by reason of its low power, appears to be made in order to justify applicant's failing to carry out its public trust and has no merit in the view of this Commission. The majority of stations now operating might just as logically make the same assertion. Surely failure to assume duties and responsibilities in small matters does not justify increasing those duties.

From all the evidence before it, this Commission concluded that public interest, convenience or necessity required a denial of said application.*

18 Pursuant to Sec. 16 of the Radio Act, 1927, Appellee herewith files the originals or certified copies of all papers and evidence presented to it, upon the original and subsequent applications of the Appellant and in the hearing upon said application, together with its orders relating thereto. The same are indexed (File numbers 1 to 56 inclusive).

Respectfully submitted,
FEDERAL RADIO COMMISSION.
IRA E. ROBINSON,
Chairman.

* * * * * * *

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* Commissioner Caldwell did not take part in this determination.

19–23 [Endorsed:] No. 4835. Technical Radio Laboratory, A Corporation, Operating Station WTRL, Applicant-Appellant, vs. The Federal Radio Commission, Appellee. Statement of Facts and Grounds for Decision. Federal Radio Commission. Louis G. Caldwell, General Counsel. Court of Appeals, District of Columbia. Filed Oct. 9, 1928. Henry W. Hodges, Clerk.

24 Form 761

File No. 1

Federal Radio Commission.

Applicant's Description of Apparatus.

Department of Commerce, Bureau of Navigation, Radio Service.

WTRL.

The following form of description of apparatus will be filled out in duplicate and forwarded to the Supervisor of Radio by each applicant for a license for apparatus for radio communication of any class (ship or land), except amateur stations for which Forms 762 and 762A are provided. The inspector, if necessary, will then arrange for an inspection of the station, or when feasible, the inspector may accompany the applicant and make the inspection during the filling of this form.

Where the form calls for a statement of details of apparatus with which the station is not equipped, the applicant will please draw a line through the space provided for the appropriate answer.

The information is desired primarily as the basis of the description of the apparatus to be inserted in the license, but many of the details are desired to facilitate the classification and particularly the inspection of stations, and will not, of course, be incorporated in the license. This form when filled will not be open to public inspection.

Notice.—This form must be submitted in duplicate to the proper supervisor of radio.

General Specifications of Station.

Name of Applicant: [1]Technical Radio Laboratory (H. C. Hogencamp).

Address: [2]28 Sicomac Avenue, Midland Park, New Jersey.

A citizen of the State of New Jersey or a company incorporated in the State of ——.

Name and address of *owner* of radio apparatus: Technical Radio Laboratory (H. C. Hogencamp), 28 Sicomac Avenue, Midland Park, New Jersey.

If Ship Station—Name of ship: ——. Owner of ship——.

Type of vessel: ——. Official number: ——. International signal code letters: ——.

Home port (where permanent document issues): ——. Average speed of vessel (nautical miles): ——

Number of persons in crew: ——. Number of passengers vessel is licensed to carry: ——.

Is vessel subject to the Act of June 24, 1910, as amended by the Act of July 23, 1912?

If Land Station—Coast or inland? Inland. Location—State: New Jersey.

County: Bergen. City or Town: Midland Park. Street: Sicomac Ave. No. 28.

Exact Latitude, North: 40°, 59′, 20″; Longitude, West: 74°, 08′, 55″.

Class of license desired (see regulations): Limited Commercial "A". Nature of service: Broadcast.

Specific hours open to public service: Unlimited.

If limited station—Corresponds only with (state names of land stations, names of ships or lines of ships): ——.

Ship or Coast Charges.

(State class of service, such as North and South American or Transoceanic.)

—— per word: ——; Minimum per radiogram: ——.
—— per word: ——; Minimum per radiogram: ——.
—— per word: ——; Minimum per radiogram: ——.

Relay charges ——.

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[1] Person, company, or corporation controlling and operating station and responsible, under the law, for operation and radio accounts.

[2] Show address of office to which should be sent communications concerning radio accounts and operation of station.

Approximate day-transmitting range (nautical miles) with average ship: ——; with similar land station: ——.

Primary Source of Power Supply.

Engine—Type and horsepower: ——.

Electric power—Source and available Kw.: Public Service 10-KW. Is power continuously available? Yes.

Power.

—— Sparks ——.

Make and type of apparatus——.

Prim. volt. —— Amp. —— Sec. volt. —— Amp. ——.

Trans. input., normal condition —— Kw.

Type of gap. —— Spark frequency ——.

—— Arc ——.

Make and type of apparatus ——.

Power —— Kw. —— Volts —— Amps. ——.

CW., ICW. and Phone 15 Watts-Phone.

Make and type of apparatus: Composite VT. Telefone.

Elect. tubes: No. 4. Type 7.5 Watts. Power rating.

No. of oscillators: 2. No. of modulators 2.

Plate voltage: 500.

Plate current: 2. Oscillators: (Total) 150ma.

Plate current: 2. Modulators: (Total) 50ma.

Filament voltage: 8. Filament current: 6¼ amps.

Type of coupling Ind.: Ind. Cond. ——.

Remarks: Inductively coupled Hartley circuit.

Type and make of receiving apparatus (conductive or inductive coupling, etc.): Three circuit regenerative set.

Type of detector: V. T.

Wave length range of receiving system: From 180 meters to 800 meters.

Antenna.

Type of antenna (T, 7, umbrella, fan, etc.): Inverted L Insulators, type Fleron. Material: Porcelain.

Masts—Number: 2. Steel or wood? Wood. Other supports: Masts are on buildings.

Essential dimensions—Maximum height above ground or water: 50 ft. Length of horizontal part: 60 ft.

Length of vertical part (including lead-in): 50 ft. Total length measured from apparatus: 110 ft.

Length of ground connection: 15 ft. Fundamental wave length: —— meters.

No. of wires: 4; size and kind of wire: 14 cop.; spacing between wires: 2 ft.

Counterpoise—Length: 50′. No. of wires: 6. Spacing between wires: 2 ft. Distance from antenna: 40′.

Lightning protective switch—Type: Knife Switch. Location: Outside—at leadin.

Remarks: ——.

25-26 Auxiliary Apparatus (if Ship Station).

Type and make: ——. Wave length: —— meters.

Source of power: ——. Normal day range (nautical miles) with ships: ——.

Plain aerial or coupled circuits? ——. Condenser in aerial circuit? ——.

File No. 1. Federal Radio Commission.

Normal Wave Length and Other Wave Lengths Applied For.

(Underscore Normal.)

300 meters ....
600 meters ....
280.2 meters lamp 1070
.... meters ....
.... meters ....
.... meters ....Not Ascertained........ ....

If public service coast station, the station insures rapid exchange with land wire stations as follows:

Company: ——. Place: ——. By direct wire or telephone? ——.

Company: ——. Place: ——. By direct wire or telephone? ——.

Number of operators required—First grade: ——. Second grade: ——. Others: ——.

Power Supply to Transmitter.

(*a*) Motor generator:

Motor.

Voltage—A. C. or D. C. and cycles: 110 volts, 60 cycles.
H. P. (rated): ½. Speed: 3,500 rpm.
Location: Transmitter house.

Generator.

Volts (rated) and cycles: 500v DC.
Kw. (rated): 300 Watts.
Kva. (rated): ——.
Remarks: ESCO motor-generator.

(*b*) Power-measuring instruments:

Type, make, range, etc.: Roller-Smith 0-2½ amps-Weston O-500 volts-O-500ma-O-10v AC.

Motor starter—Direct or distant control? Direct. Are motor field rheostat and generator field rheostat provided? Yes.

(*c*) Storage battery:

Make: —— Type ——.

Capacity (ampere hours): —— Number of cells: —— Location: ——.

(*d*) Internal-combustion engine:

Make: —— Type: ——.

Kw. of generator (rated): —— Location: ——.

Radio Apparatus.

(*a*) Transmitter:

Is proper means provided for reducing the range of the station, as required by the London Convention? Yes.

Condenser in aerial circuit for —— meters, —— meters.

Coupling—Inductive or conductive? Inductive. Type of primary condenser: Mignon.

(*b*) Receiver:

Is secondary circuit tuned or untuned? Tuned. Are complete duplicate receivers installed? Yes.

Are tuning positions for 300 meters and 600 meters plainly marked on apparatus? Yes.

Method used for disconnecting receiver when transmitting (hand switch or automatic "break"): Separate Antenna.

Signature of applicant: Technical Radio Laboratory.
By[1] H. C. HOGENCAMP.

Instructions To Supervisor of Radio.

Send out this form in triplicate—one for the applicant's files if he desires it. When received back, fill in the following; preserve one copy for your records and forward the original to the Commissioner of Navigation with report and recommendation.

Received by (supervisor): Arthur Batcheller at New York, N. Y. Date: ——.

Date of inspection of station: Not inspected. Inspected by: ——.

Name of port or inspection district in which inspection was made: ——.

Report and Recommendation.

December 17, 1926.

Forwarded for Bureau action.

ARTHUR BATCHELLER,
U. S. Supervisor of Radio.

The license, when approved by the Secretary of Commerce, will be forwarded to the Supervisor for delivery to the applicant. The Supervisor will then fill in from the license the following on his file copy:

Class of license: —— Serial No.: —— Date of delivery to applicant: ——.

27-36 Federal Radio Commission, File No. 3.

Copy.

United States of America, Department of Commerce.

Call Letters: W T R L.

Station License.

No. 3025.

Class: Broadcasting.

Technical Radio Laboratory (H. C. Hogencamp) is hereby licensed to operate a radio transmitting station and all apparatus incidental to or used in connection therewith, upon the terms and conditions following:

---

[1] For signature of an official, if the applicant is a company or corporation.

1. The owner of the station is Technical Radio Laboratory (H. C. Hogencamp).

2. Its location is 28 Sicomac Ave., Midland Park, New Jersey.

3. The purpose for which said station is licensed is the carrying on of general broadcasting for public information, instruction, amusement or entertainment.

4. The wave length designated by the station as its normal sending wave is 280.2 meters, 1070 kilocycles.

5. The hours for which the station is licensed are not limited.

6. The President of the United States in time of war or public peril or disaster may cause the closing of this station and the removal therefrom of all radio apparatus, or may authorize the use or control of the station or apparatus by any department of the Government, upon just compensation to the owners.

7. The operator of the station shall not willfully or maliciously interfere with any radio communication from another station.

8. All operations of the station shall conform to the laws of the United States, and the provisions of any international treaty or convention to which the United States is a party.

9. This license will continue in force for three months from its date.

This license is issued pursuant to the Act of Congress of August 13, 1912, entitled, "An Act to Regulate Radio Communication," and is subject to the restrictions and regulations therein contained.

Done at Washington, D. C., this 18th day of December, 1926.

[SEAL.] HERBERT HOOVER,
Secretary of Commerce.

(Signed) A. J. TYRES,
Acting Commissioner of Navigation.

37 & 38 Federal Radio Commission, File No. 10.

Expiration of Temporary Permits #10.

Federal Radio Commission, Washington, D. C.

May 28, 1927.

General Order No. 13.

In consideration of the fact that a certain amount of time is required in many cases for making the changes of equipment required by changes of station frequency, and for securing suitable control equipment to maintain frequency without serious variation, the Federal Radio Commission hereby amends General Order No. 11, dated May 21, 1927, to read as follows:

"The Federal Radio Commission hereby orders that all temporary permits to operate radio broadcasting stations under the terms of the Radio Act of 1927, shall terminate at 3 o'clock, local standard time, on the morning of Wednesday, June 15, 1927, and that thereafter all radio broadcasting stations subject to the provisions of the Radio Act of 1927, shall be operated solely in accordance with the provisions of the licenses issued as of June 1, 1927, by the Federal Radio Commission."

The Federal Radio Commission hereby orders that all licenses for the period of sixty days, issued as of June 1, 1927, shall not become effective until 3 o'clock, local standard time, on the morning of Wednesday, June 15, 1927, and shall continue in effect, unless previously revoked or modified by order of the Commission, for a period of sixty days after June 15, 1927.

* * * * * * *

39-41 Federal Radio Commission, File No. 12.

Federal Radio Commission, Commerce Building,
Washington.
August 8, 1927.

Technical Radio Laboratory,
Radio Station WTRL,
28 Sicomac Ave.,
Midland Park, N. J., RC-3.

SIR:

Your license to operate your radio broadcasting station, which will expire in a few days, is hereby extended and renewed from its date of expiration until October 14, 1927, on which day it will terminate unless further extended or renewed by this Commission.

This extension or renewal is subject to all the terms and conditions of the now existing license.

[SEAL.] FEDERAL RADIO COMMISSION,
By W. H. G. BULLARD,
Chairman.

* * * * * * *

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42 Federal Radio Commission, File No. 15.

October 24, 1927.

Technical Radio Laboratory,
Radio Station WTRL,
28 Sicomac Ave.,
Midland Park, N. J., RC-3.

SIR:

Your licence to operate your radio broadcasting station, which will expire October 31, is hereby extended and renewed from its date of expiration until December 31, 1927, on which day it will terminate unless further extended or renewed by this Commission.

This extension or renewal is subject to all the terms and conditions of the now existing license.

[SEAL.] FEDERAL RADIO COMMISSION,
By W. H. G. BULLARD,
Chairman.

43 Federal Radio Commission, File No. 16.

Federal Radio Commission, Washington, D. C.

General Order No. 21.

December 1, 1927.

All existing station broadcasting licenses and renewals are hereby extended until and will terminate on January 31, 1928.

All broadcasting stations will make application for new licenses not later than January 15, 1928. Application forms will be mailed to all existing stations about January 1, 1928.

44 Federal Radio Commission, File No. 17.

Copy.

Form No. 8.

Radio Division, 1928, Jan. 17, A. M. 9:41.

United States of America, Federal Radio Commission.

Application for Renewal of Radio Broadcasting Station License.

(Submit in triplicate to District Supervisor of Radio. Swear to one copy.)

Federal Radio Commission, Jan. 18, 1928.

To the Federal Radio Commission:

1. Name of applicant: Technical Radio Laboratory.
2. Post office address: State, New Jersey; City, Newark. Street, Central Ave.; Number, 380.
3. Citizenship: American.

4. If a corporation, company, or association:
   (a) Organized under laws of State of New Jersey.
   (b) May one-fifth, or more, of capital stock be voted by an alien or his representative or by a foreign government or the representative thereof? No.
   (c) State name and position of any director or officer who is an alien: None.
   (d) If applicant is a subsidiary, state name and address of parent company: No.
   (e) Has any change in ownership of this station occurred in the past 60 days? No.

5. Is the applicant the representative of an alien or foreign government? No.

6. Has the applicant, since February 23, 1927, been found guilty by any Federal Court of unlawfully monopolizing, or attempting to unlawfully monopolize, radio communication through control of manufacture or sale of radio apparatus, exclusive traffic arrangements, or any other means, or by unfair methods of competition? No.

7. Description of transmitting apparatus:
   (a) Make: Our own; Type: Composite V. T. Telephone.
   Maximum power: 15 watts; Minimum: —.
   Output power of oscillator or amplifier tube: 15 watts.
   Electron tubes, number of: 4.
   Oscillators: Number of: 2; Total plate current: 70 MA; Total plate voltage: 450.
   Modulators: Number of: 2; Total plate current: 100 MA; Total plate voltage: 450.
   Amplifiers: Number of: —; Total plate current: —; Total plate voltage: —.
   Type of frequency control employed: Separate oscillator (dead beat method).
   Make of frequency control: Our own.
45 (b) Has any change in equipment been made in the past 60 days? No.

8. Location of transmitter: State: New Jersey; County: Bergen; City or town: Midland Park; Street: Sicomac Ave., No. 28.

(a) Approximate number of families within one mile of transmitter? 1000. Two miles? 2000. Three miles? 10000.

(b) Location of studios: 28 Sicomac Ave., Midland Park, N. J.

(c) Has any change in location of either transmitter or studio been made the past 60 days? —.

9. Specify actual periods station is operated:

	A. M.	P.M.	Total daily hours.
(a) Sunday: Please refer to paragraph #11.			
Monday:	....	....	.....
Tuesday:	....	....	.....
Wednesday:	....	....	.....
Thursday:	....	....	.....
Friday:	....	....	.....
Saturday:	....	....	.....
Total Weekly Hours		....	......

(b) Does station divide time, and if so with what station? WHPP, WMRJ.

(c) Does station obtain programs from what is known as a "Chain"? No.

(d) Name of chain: None.

(e) What is total hours per week of chain programs (i. e., programs, both paid or sustaining, which are duplicated by any other station)? None.

(f) How are stations connected? Wire? —. Radio? —.

10. Under existing license:

(a) What frequency is used? Kilocycles? 1450. Meters? 206.8.

(b) What power output is employed after 6 p. m.? 15 Watts.

(c) What power output 6 a. m. to 6 p. m.? 15 Watts.

(d) Total number of hours station operated during past 12 months? (See Paragraph 11.)

(e) State minimum number of hours station will be operated each quarter: (See Paragraph 11.)

11. Attach printed program for last week: It of course is understood that when our wave length is raised and our power increased this station will operate every minute of the evening and day as it is impossible to
46 have a full program on the wave length and the amount of power now used by this station.

12. Why will the operation of the station be in the public convenience, interest, and necessity? Because this station is one of the very few broadcasting stations in Northern New Jersey and the vast population of this territory can use the facilities of this station.
    (a) Average amount of time weekly devoted to following services:
        (1) Entertainment: (See Paragraph 11.)
        (2) Religious: —.
        (3) Commercial: —.
        (4) Educational: —.
        (5) Agricultural: —.
        (6) Fraternal: —.
    (b) Is direct advertising conducted in interest of applicant? No; or others: —.
        (1) Are merchandise prices quoted in interest of applicant? No; or others: —.
    (c) Does or will applicant sell time? Yes.
        (1) Average number of hours sold weekly before 6 p. m.? None; after 6 p. m.? None.
        (2) Average number of hours used weekly in interest of applicant? 22 Hours.
    (d) Average amount spent weekly for talent? None.
    (e) Total annual net income, exclusive of expense for talent: None.
    (f) If applicant does not propose to sell time, how will station be supported? —.

13. Give names and classes of licensed operators in charge of station: H. C. Hogencamp—Broadcast.
    (a) Number of other employees? One. Total weekly pay roll: $100.00.

14. Do you maintain continuous watch on ship calling channel during operative hours? Yes.

15. Does the applicant own or control any other broadcast station? No.
    - (a) State number and call letters of such stations? —.
    - (b) Does applicant own or control any radio station other than broadcasting? No.
    - 47-52 (c) Give number and type of any such stations: —.
    - (d) For what purpose are those stations used? —.
16. History of Station:
    - (a) Date of first license to broadcast: December 18, 1926.
    - (b) First frequency (1070 KC); Wave length: 280.2; Power: 15 Watts.
    - (c) List all changes in frequency and power authorized, with dates:
      dates:
      Licensed originally on 1070 K. C. on Dec. 18, 1926.
      Changed by F. R. C. to 930 K. C. on April 26, 1927.
      Changed by F. R. C. to 1250 K. C. on May 3, 1927.
      Changed by F. R. C. to 1450 K. C. on June 1, 1927.
    - (d) On what frequencies and with what power did station operate between July 1, 1926, and February 23, 1927? 1070 K. C., 280 meters, 15 Watts.
17. The applicant waives any claim to the use of any particular frequency or wave length or of the ether as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests a radio station license in accordance with this application.

Dated this 14th day of January, 1928.

TECHNICAL RADIO LABORATORY,
H. C. HOGENCAMP,
Applicant.

State of New Jersey,
County of Essex, ss:

H. C. Hogencamp, being first duly sworn, upon his oath deposes and says that he is the Agent of (if applicant is not an individual, insert "agent of") above-named applicant and that the statements in the foregoing application are true of his own knowledge, and those made on information and belief, he believes to be true.

TECHNICAL RADIO LABORATORY.
H. C. HOGENCAMP.

Subscribed and sworn to before me this 14th day of January, 1928.

ANNA FRIEDMAN,
Notary Public.

Commission expires May 19, 1932.

Radio Supervisor's Report.

Application received January 16, 1928.
Remarks (state any pertinent facts): Forwarded for action.

ARTHUR BATCHELLER,
U. S. Supervisor of Radio.

U. S. Supervisor of Radio, Department of Commerce. Received Jan. 16, 1928, New York, N. Y.

53 & 54 Copy.

Federal Radio Commission, File No. 23

Federal Radio Commission, Washington, D. C.

70.

May 25, 1928.

Technical Radio Laboratory,
Radio Station WTRL,
Providence, R. I.

Dear Sir:

Please note copy of attached order No. 32 in which the Commission has extended your present license for a period of sixty days. From an examination of your application for future license, it does not find that public interest, convenience or necessity would be served by granting it. The Commission has fixed the date for hearing on this application on July 9th, at ten o'clock A. M. in its offices in Washington, D. C.

At this hearing unless you can make an affirmative showing that public interest, convenience or necessity will be served by the granting of your application, it will be finally denied.

Very truly yours,
FEDERAL RADIO COMMISSION,
By IRA E. ROBINSON,
Chairman.

* * * * * * *

55-112 Federal Radio Commission, File No. 25.

Federal Radio Commission, Washington, D. C.

#132.

File No. —. Docket No. —.

In re Application of (Station:) —— for Renewal of License.

Order.

The Commission having considered the evidence and the arguments presented to it in the above-entitled case, heretofore heard and taken under advisement, and having found that public interest, convenience or necessity would not be served by granting said application,

It is ordered that said application be, and the same is hereby, denied; this order to be effective on September 1, 1928, at the hour of 3 o'clock a. m., Eastern Standard Time.

FEDERAL RADIO COMMISSION,
By IRA E. ROBINSON,
Chairman.

Dated August 23, 1928.

* * * * * * *

113 J. C. W., E. M. W.

Federal Radio Commission, Washington, D. C.

Office of the Chairman, Interior Department Building.

Wednesday, July 11, 1928.

The Commission having resumed at 2 o'clock p. m., and having begun and concluded hearings as to other stations, then called case No. 14, Station WTRL, Midland Park, New Jersey, under General Order No. 32.

Present:
Commissioners: Ira E. Robinson, Chairman; Orestes H. Caldwell, Harold A. Lafount.
Secretary: Carl H. Butman.
Chief Counsel: Louis G. Caldwell.
Assistant Chief Counsel: E. W. Pratt.
Official Shorthand Reporters: Hart, Dice & Carlson.
On behalf of Respondent: Harry Green, Godfrey L. Munter, L. T. Fetzer.

"Federal Radio Commission, Washington, D. C.

General Order No. 32.

May 25, 1928.

"The Commission after an examination of the ap-
114 plication for renewal of station licenses of the below named stations has not been satisfied that public interest, convenience or necessity will be served by granting these applications.

"It extends for a period of sixty days the existing licenses of these stations subject to all modifications and extensions, to terminate at three o'clock a. m., August 1st, 1928.

"The Commission fixes Monday, July 9th, ten o'clock a. m., in its offices in Washington, D. C., as the time and place for a hearing for each of these applications.

"The stations to which this order applies are as follows:

"To station WKBN and others.

FEDERAL RADIO COMMISSION,
By IRA E. ROBINSON,
Chairman."

"Federal Radio Commission, Washington, D. C.

May 25, 1928.

"Dear Sir:

"Please note copy of attached order No. 32 in which the Commission has extended your present license for a period of sixty days. From an examination of your application for future license, it does not find that public interest, convenience or necessity would be served by granting it. The Commission has fixed the date for hearing on this application on July 9th, at ten o'clock a. m. in its offices in
115 Washington, D. C.

"At this hearing unless you can make an affirmative showing that public interest, convenience or necessity will be served by the granting of your application, it will be finally denied.

Very truly yours,

FEDERAL RADIO COMMISSION,
By IRA E. ROBINSON,
Chairman."

Mr. Pratt: Case No. 14, Station WTRL.

Mr. Munter: In this case, may it please the Commission, I as counsel for WTRL desire to make certain elementary motions. The first one is that I object to this hearing, because the Commission, consisting of you three gentlemen, is not properly composed. The Act specifically provides that there shall be five Commissioners, and nowhere in the act is it specified, as far as I am able to see, that any part of the five, unless there be some good reason shown on the record, in the event of illness or something of that kind, shall have the right to determine and pass upon these cases.

The Chairman: Overruled. We have a quorum here.

Mr. Munter: To that point I note an exception.

The Chairman: I will go further and say that all these cases could be referred to an examiner. The Act specifically provides for examiners.

Mr. Munter: Does your Honor wish to hear argument on this motion?

116 The Chairman: No; we do not.

Mr. Munter: Then the next matter I want to call attention to is something which I consider entirely unwarranted and which amounts to a persecution of this station. While this hearing was in progress this afternoon there was handed to the public press in this room a letter or paper marked "For release Wednesday, June 13, 1928, Federal Radio Commission," purporting to be a release of a statement by this Commission and only one of its kind pertaining to this station.

The Chairman: Let me see that.

Mr. Munter: I offer it in evidence.

The Chairman: This is dated June 13. This was released June 13, 1928.

Mr. Munter: And I say it was today in the hearing room circulated among the press. I do not think there is one other instance where this Commission took it upon itself to publish any such release as to any other station except WTRL.

The Chairman: This is not by Commission action.

Mr. Munter: It is subscribed "Federal Radio Commission" and is a vicious attack upon this station; and I offer it in evidence for whatever it may be worth.

The Chairman: It may be admitted in evidence.

(The document referred to was marked "Respondent's Exhibit No. 1—WTRL.")

Mr. Munter: Then I want to call the Commission's attention to the fact that there was also circulated a letter pertaining to this station, purporting to be addressed to the Honorable Senator Royal S. Copeland, United States Capitol, Washington, D. C., apparently signed "O. H. Caldwell, Federal Radio Commissioner, 1st Zone," dated January 11, 1928,—also a vitriolic attack upon this station. I object to it, on the record. It was circulated today to create an atmosphere. 117

The Chairman (after examining document): This has been done by a newspaper man, Mr. Stephens, who asked that that be put on the Commissioners' desk.

Commissioner Lafount: I have not seen it before.

The Chairman: I have not seen either one.

Mr. Munter: I know that the Commissioners will not be influenced by it, but at the same time I consider it highly improper.

The Chairman: I agree with you.

Mr. Munter: And the person responsible ought to be called before the Commission for an explanation.

I offer it in evidence and ask that it be marked.

The Chairman: We do not desire to encumber the record, because this is not going to interfere with your case. Proceed with the case.

Mr. Munter: I ask that it be markd "Respondent's Exhibit No. 2."

(The document referred to was thereupon marked for identification "Respondent's Exhibit No. 2—WTRL.")

In order to preserve the record I offer in evidence a letter in regard to the same matter circulated in the hearing today, addressed by the Technical Radio Laboratory operating Station WTRL, to the Honorable Royal S. Copeland,
118 United States Senator, Washington, D. C., dated January 24, 1928, bearing upon the charges contained in this unwarranted publication.

The Chairman: Is that a letter?

Mr. Munter: From this station, pertaining to the mattter contained in these two publications that have been received in evidence.

The Chairman: I fear we are getting away from the case. You do not need to offer all that, because it is not the judgment of the Commission.

Mr. Munter: I feel, your Honor, that it is, in the mind of one of the Commissioners, because one of the publications is signed by one of your Commissioners and the other one contains this charge against this station:

"At the present time, the room which houses the radio equipment, is being used by Mr. Hogencamp, Sr., as a room for charging storage batteries, and also for raising dogs."

That is the charge in this letter, released, apparently, by this Commission to the press.

And then in this other letter addressed to Senator Copeland, which is signed, or purports to be signed, by Commissioner Caldwell, the whole situation is referred to.

If your Honor please, I submit that it is competent for us in order to meet the material contained in these publications, by showing the reply made by this station to Senator Copeland with reference to the charges circulated here today.

The Chairman: I think the Chair had better settle all that and say that none of this incident is pertinent to this case and will not be admitted. You may show that 119 your station is in the public interest. You may prove fully that the station is not so *so* used; but we get far afield when we admit hearsay. Whatever Mr. Caldwell may have said is not evidence. Four commissioners know nothing of the incident whatever.

Commissioner Caldwell: I would like to withdraw from the case. I think that is the best way.

The Chairman: We must not encumber these cases with an incident of this kind.

Mr. Munter: In this connection I understand that Commissioner Caldwell desires to withdraw from the case. I do not say that any member of this Commission intentionally circulated this matter, and I do not accuse any Commissioner of having circulated it among the press. If Commissioner Caldwell feels that in view of past relations between himself and Mr. May of this station he could not impartially sit and is really more or less disqualified, I think it is commendable on his part to withdraw.

Commissioner Caldwell: I feel very much that way.

Mr. Munter: And he can do so without any reflection whatever on his part.

Commissioner Caldwell: I would like to withdraw from the case, with the Chairman's permission.

The Chairman: It depends on the Commissioner, not on the Chairman.

Commissioner Caldwell: All right; I will withdraw.

(Commissioner Caldwell retired from the hearing room.)

The Chairman (after informal discussion): Let it 120 be noted now that this case is heard before the Chairman and Commissioners Sykes, Lafount and Pickard.

Mr. Munter: While we are waiting, I would like to get the record straightened up here. I do not understand that you excluded this answer (indicating)?

The Chairman: Let the record show that you have tendered these two documents and the answer of the station to Senator Copeland, and that they were excluded.

Mr. Munter: And exception is noted to your Honor's ruling.

The Chairman: And let the record also show that Commissioner Caldwell excused himself from sitting in the case. That puts it all out, and you have four Commissioners to hear you. You have the Commission en banc.

Mr. Munter: I was very anxious for you and the other Commissioners to hear this, because this is one of the consolidation cases in the New Jersey group, and you will be better able to pass upon the application.

I ask to have the letter of January 24, 1928, to Senator Copeland, marked for identification.

(The letter referred to was marked by the reporter for identification "Respondent's Exhibit No. 3—WTRL.")

I think the record will show that exhibits 1 and 2 were circulated freely in the hearing room before the hearing.

Now, may it please the Commission, on behalf of the Technical Radio Laboratory, operating Radio Station WTRL, myself, Godfrey L. Munter, and Harry Green, Chief Counsel for the station, as well — Judge Fetzer of
121 counsel here, desire to make the following motions.
The motion has seven grounds. The seventh is withdrawn and I shall only read the first six.

I ask that it be received and marked "Respondent's Exhibit 4."

The Chairman: Are you going to read it?

Mr. Munter: I would like to have it filed in the archives of the Commission.

The Chairman: The Commission will pass on it now so you can go on,——

Mr. Munter: It is a motion similar to the ones made by Judge Fetzer in his cases.

Mr. Pratt: He has asked to have it maked as Exhibit No. 4, and I understand that it is a motion. Is it not out of order to have it marked as an exhibit in the case?

The Chairman: It is not an exhibit, but it ought to be a part of the record.

Mr. Munter: I think Mr. Pratt's suggestion is a good one.

The motions are as follows:

1. That before further proceeding with this hearing the Commission furnish to the petitioner a copy of the charges against it, as well as any other information it may have in anywise detrimental to the said petitioner, together with any other material which the Commission may have, in support of which it cited the said station to appear and show cause.

2. That this proceeding be dismissed and renewal license be granted to the Technical Radio Laboratory
122 because it is not within the power of the Federal Radio Commission to refuse such a renewal, for the reason that such refusal would result in the prohibition of the use and enjoyment of property and rights vested and used in accordance with law prior to February 23, 1927, and would be confiscatory without due process of law and without compensation, and neither the Congress of the United States nor this Commission has power so to do.

3. That this proceeding be dismissed and a renewal of a license be granted to Technical Radio Laboratory because refusal of such license would be confiscatory of property and rights without compensation and without due process of law and hence unconstitutional unless it affirmatively appears that the matter broadcast is intrinsically of such nature and character as to be against public policy to such an extent as to make its prohibition necessary, or that the broadcast thereof is positively detrimental to public interests or an impairment of prior rights, and such has not so affirmatively appeared.

4. That the proceeding be dismissed for the reason that it is not a proceeding to revoke a license under any of the reasons set forth in "An Act for the regulation of Radio Communication", approved February 23, 1927, or any act amendatory thereof.

5. That this proceeding be dismissed because it has not been made affirmatively to appear that the broadcasting by this station interferes with any rights acquired at the same or any prior time by any other broadcasting person, persons, or corporations.

123 6. That this proceeding be dismissed because any decision to refuse the renewal of the license to this corporation would be unethical, unnecessary, unreasonable and arbitrary, and merely a cloak to hide the true purpose of advancing the junior rights of other broadcasters.

The Chairman: Each and every one of the motions is overruled, with the exception of the seventh which you mentioned as being withdrawn.

Mr. Munter: That is withdrawn before the hearing.

I respectfully note an exception to the Commission's overruling each one of these motions.

Coming down to the meat of the case, I would appreciate it if the Commission would, as in the case on yesterday, advise us as to some of the charges which have been preferred against this station so that we can shortly and briefly meet them; and we feel we can do so, in the economy of time.

The Chairman: As I understood it a while ago, the charges are that this is not a broadcasting station, but one for the charging of batteries and for the housing of dogs, and upon that ground I assume it was listed for denial of license, and very properly so if that is the fact.

Mr. Munter: May I, then, take for granted that Exhibit No. 1 is the charge against us?

The Chairman: Yes. There may be this further charge of not maintaining the frequency assigned to you.

Mr. Munter: First, may I read the affidavit of Harold C. Hogencamp. I ask that it be marked "Exhibit 4" and be received in evidence.

124 (The affidavit referred to was marked "Respondent's Exhibit No. 4—WTRL.")

The charge here, if the Commission please, seems to be this, that the apparatus was found to be partly dismantled and in inoperative condition, covered with dust and dirt, and three meters were missing from the panel board.

(Reading:) "As a matter of further information to the Radio Division and the Federal Radio Commission, this office has never heard this station on the air."

Also "The younger Mr. Hogencamp, who owns the station, is employed in a radio store in Paterson, N. J."

Let me read the affidavit of Mr. Hogencamp whose father is said to run a dog kennel in this station.

(Reading:) "Harold C. Hogencamp, of full age, being duly sworn according to law on his oath deposes and says that:

"1. I am President and Operator of Technical Radio Laboratory, of Midland Park, holder of radio station broadcasting license call letters W-T-R-L.

"2. I hold a Radio Operator's License, Commercial Second Class, issued by the Department of Commerce, Radio Division #423 valid for the operation of a broadcasting station dated July 26, 1927."

So much for the charge that there is no licensed operator.

"3. I have been operating said station since the issuance of license to it dated December 18, 1926, #3025, down to the present time."

And this is acknowledged on the tenth day of July.

"4. This station has been 'on the air' during that period on an average of three times a week, down to the
125 present time, with various kinds of programs including sport talks, musical programs, patriotic programs, religious programs and technical programs and have catered to things of interest to people in and about Midland Park, New Jersey, which is the service range of the station by reason of the low wattage of this station."

The Commission may recall that in this circular released by the Commission on June 13, to the press, there was a charge that this station was on the air and nobody had heard it or the community had not heard it.

The Chairman: That is something that I never saw before, but it seems to be a copy of an official letter from the Inspector, Mr. Batcheller, in New York. That is Mr. Batcheller's charge. He is a police officer of the station under this Act.

It is a very serious one, and I would like to have him reply to it, and I assume that the Commission will reserve the right to introduce evidence supporting that.

Mr. Munter: May I ask your Commission this question? Is it not a fact that one of the impelling reasons for citing this great station before the Commission was that particular report?

The Chairman: It would seem so, without an investigation of what the ground was.

Mr. Munter: May we at this time, before proceeding with the reading of the affidavit, request the Commission to examine before you inspectors Bogardus and Manning at such time as the Commission may fix and at such place suitable to your convenience?

126 The Chairman: Who are they?

Mr. Munter: The ones who made the report.

The Chairman: Introduce your evidence, and we will determine that.

Mr. Munter: You will make a ruling later on that point, then?

The Chairman: Yes.

Mr. Munter (Reading further): "5. The station has received hundreds of letters from local 'listeners-in,' exhibiting great interest in this station which is the only station in this part of Bergen County, one of the largest counties territorially in the State of New Jersey, particularly commending us for catering to local interest."

It is said that the station is in a dilapidated and unworkmanlike condition, that parts were missing, that dust and dirt had accumulated. This is what the affidavit of the man who runs it says:

"We estimate the cost of this station, its equipment, operating expense, experimental work, organization fees and expenses, legal fees, &c., to be about $10,000.00, and the broadcasting license is an absolutely essential and necessary right, without which this station and the moneys which we have put in it is an absolute loss."

I referred to it a moment ago as a large station. It is a small station, because they have for two years sought and asked your Commission for additional wattage, and I believe that they will receive it after you have heard this case and considered all the facts.

(Reading:) "We have operated this small station
127 in the past and at the present time in the public
interest and convenience of those within the range of where it serves and of course the Commission should realize that by reason of restricting this station to 15 watts it has greatly impaired its ability to function on a better basis so as to serve the public in a much better way. If the Commission will increase the wattage to the point of usefulness to the station, we will greatly increase the number and character of our programs and create a situation where the station will be not only in local demand but in demand throughout the northern part of this state."

May it please the Commission, it is unreasonable that a station of only 15 watts' strength should be referred to in the terms that it is cited here in this particular report of Mr. Bogardus and Mr. Manning.

The Chairman: I cannot understand, unless there was some basis for it, how two government officials would make such a report.

Mr. Munter: If you read it in connection with the letter that has passed between Commissioner Caldwell and Senator Copeland, and if you are familiar with the atmosphere that has been created in the hearings of the Senate on the confirmation of Commissioner Caldwell by Mr. May, my client here, then the Commission will have before it a background which will readily explain this unusual report, and what it means to the Commission to have a hundred and seventy-eight stations cited and only in one case to have released to the press such a report about any one
station. That is the only one that has come to my
128 notice where the Commission took upon itself to re-
lease to the press a vicious attack upon any one of
the 178 stations.

The Chairman: No, the Commission did not take any action in the matter at all. It is a new incident to me, entirely.

Here is what I mean to say, that these officials are entirely independent of this Commission. There seems to be in the files of the Department of Commerce that charge against your station, and that is a right critical issue indeed. I think the Commission wil confer about that and determine it. We may want to bring as witnesses such officials that made such a report against your station. I do not think they would do it baselessly. They must have seen some dirt, some dust, some dogs, and some batteries being charged.

Mr. Munter (Reading). "Mr. May, General Manager of the Station, and I have been working on plans for some time to greatly facilitate the use of this station and the service that it will give the public, as soon as the Commission would give us more power and a better wave length but of course we have not been able to put our plans into action because we have been waiting for word from the United States Supervisor of Radio and the Commission for increase of power and change of wave length since February 2, 1927, and since the Commission assumed its duties under the Radio Act of 1927.

"We protest against the denial or revocation of the present license and we contend that we have served the public interest in a greater proportion than the powerful stations created by the Commission, in comparison with
our very small wattage of 15 and the wattage of 50,-
129 000 granted to some of these powerful stations, and
we protest further on the ground that by denying or revoking our license you will be taking our property without due process of law"—that last part is covered in our motion.

Mr. Pratt: In order to clear the record, may we have a statement as to why Mr. Hogencamp is not present and why the case is submitted upon his affidavit?

Mr. Munter: We have other witnesses here, and the Commission has made a ruling that affidavits will be acceptable. We had thought of bringing Mr. May, the General Manager, down here, who is more conversant with the matters of detail than Mr. Hogencamp, the owner and the president of the company. We have given to the Commission the best information we can.

The Chairman: Who is the owner of the station?

Mr. Munter: It is a corporation, and Mr. May is its general manager. But the man who is charged with running the dog house is Mr. Hogencamp, the president of the company.

The Chairman: You are representing the licensee?

Mr. Munter: I am represesenting Station WTRL and its licensee.

Does that answer your question, Mr. Pratt?

Mr. Pratt: Yes.

Mr. Munter: Next I want to read the affidavit of D. Winthrop May; but before reading it I want to offer it in evidence and ask that it be marked "Respondent's Exhibit No. 5" and received in evidence.

(The document referred to was marked by the reporter "Respondent's Exhibit No. 5—WTRL.")

* * * * * * *

130 It is styled "Technical Radio Laboratory, Call
Letters WTRL, Station Midland Park, New Jersey, General Offices 380 Central Avenue, Newark, New Jersey.

"D. Winthrop May, of full age, being duly sworn according to law on his oath deposes and says that:

"1. I am Secretary and General Manager of Technical Radio Laboratory, of Midland Park, and Newark, New Jersey, holder of radio station broadcasting license, call letters W-T-R-L.

"2. First, I respectfully protest against the Commission issuing General Order No. 32 against this station, prejudging our application, denying us a hearing on application heretofore made embraced in letters which passed between the Station and your Commission, dated between Feb. 2nd, 1927, and April 3d, 1928, copies of which are attached hereto and made a part hereof, and from concluding without any legal proof or any other proof before it, without notice to us or otherwise, in your circular letter of May 25th, 1928, that 'from an examination of your application for future license, it does not find that public interest, convenience or necessity would be served by granting it,' and then fixing July 9th, 1928, as date of hearing and advising us that 'at this hearing unless you can make an affirmative showing that public interest, convenience or necessity will be served by the granting of your application, it will be finally denied.'

"3. I respectfully ask the Commission to first accord to us the hearing to which we are entitled to on the previous application above mentioned."

The fourth paragraph of this affidavit, may the record show, is withdrawn, because Commissioner Caldwell 131 has voluntarily withdrawn from the case. I will not read it, so that the record will not be burdened by it.

We offer in evidence a copy of the license which we now hold.

The Chairman: We have that here.

Mr. Munter: If it will be considered, that is all I ask.

The Chairman: That is the license which is in question.

Mr. Munter: Yes.

Mr. May says this in paragraph 10:

"We plan and are financially and otherwise able to operate a 500 watt station on a non-commercial basis for the benefit of the owners of receiving sets and the radio public in general in this vicinity. We have worked out plans with the radio trade in New Jersey for our mutual cooperation whereby each dealer will have the privilege of the use of the station without charge to said dealer except the cost of talent, for the purpose of establishing closer contacts between said radio trade and the public which use the receiving sets and improving programs and increasing the number of receiving sets in use, to the mutual advantage of the trade and the public.''

I want to say this, that if you will have these learned gentlemen on raising dogs make a survey of Mr. May you will find that he is one of the leading citizens of New Jersey and financially responsible, and so this statement has a great bearing upon that subject.

* * * * * * *

The Chairman: What I am interested in right now
132 is this. Does the affidavit that you have already introduced make a denial of this charge by the inspectors?

Mr. Munter. Oh, yes; the affidavit of Mr. Hogencamp—no; it does not deny that he is raising dogs; it does not say anything about it. In a court of law you know, Judge, that such a charge being entirely irrelevant, would be thrown out immediately and not considered at all.

The Chairman: No; I would not think much of a broadcasting station that had a lot of pups in it. I would want it to have a set-up that looks like something and that shows attention to it.

I think the Commission will rely on this charge coming officially, as it does, and let you disprove it, and we will produce inspectors Bogardus and Manning.

Mr. Munter: The affidavit does not specifically deny all of those charges. I have Mr. May here for that purpose.

The Chairman: He says, ''The apparatus was found to be partly dismantled and in an inoperative condition.'' You say that is not true?

Mr. Munter: That is disproved by the statement of Mr. Hogencamp that ever since the granting of the license he has personally operated that station. Let me read his exact language——

The Chairman: Does he deny that three meters are missing from the panel board? And that there is no evidence to show that it had been used for a long period of time? I cannot understand how a government man would say a thing of that kind unless there was something to base it on.

Mr. Munter: I am very glad you are bringing it
133 out, because it gives me a chance to make this observation now——

The Chairman: It is an issue in the case. Let us settle it.

Mr. Munter: It is an issue in the case; and yet the Commission has not to this day told Mr. May what the charge is, and if we did not know what it was from this circular that you have ruled out we would not be able to find half of what we have here.

The Chairman: We will give you ample time to answer all these charges.

Mr. Munter: We have not to this day received any notice officially or otherwise that there is a charge of raising dogs in this station, except what we have in the record that you have ruled out and that the Commission gave to the press on June 13——

Commissioner Sykes: What is it you say the Commission gave out on the 13th?

Mr. Munter: That was issued for release to the press.

The Chairman: There is no Commissioner here who will say that he ever saw the order or that it was ever under consideration by the Commission, or any order made for any mimeographing of any press release or anything of that kind, I assume.

Commissioner Sykes: I want to say, individually, that I never heard of such a notice as that until I saw it a moment ago. It was not given out with my knowledge or consent.

The Chairman: I have stated that for myself.

Mr. Munter: We do not want to waste time and talk about a man who is not here. I am not impugning
134 anybody's motives, except that it appears there was
a certain dispute with reference to his confirmation, and of course it is apparent to any disinterested party that all this special attention to this case was a part of the atmosphere connected with the whole transaction.

The Chairman: But that is all cleared up by Commissioner Caldwell's not sitting.

Mr. Munter: All right; do not let us talk any more about that.

* * * * * * *

Mr. May says:

"We plan and are financially and otherwise able to operate a 500 watt station on a non-commercial basis for the benefit of the owners of receiving sets and the radio public in general in this vicinity. We have worked out plans with the radio trade in New Jersey for our mutual co-operation whereby each dealer will have the privilege of the use of the station without charge of said dealer except the cost of talent, for the purpose of establishing closer contacts between said radio trade and the public which use the receiving sets and improving programs and increasing the number of receiving sets in use, to the mutual advantage of the trade and the public."

That is what Mr. May wants to do, to maintain and operate a station of 500 watts, for the benefit of whom? Not for himself. It is a non-commercial station. He wants to operate it for the community.

The Chairman: Let us not take up the question of the granting of power, because that is not pertinent.

Mr. Munter (Reading): "11. The aforesaid plan
135 was worked out through D. W. May, Incorporated,
of Newark, New Jersey, one of the largest distributors of radio receiving sets in the country, and with over 1,000 dealers in the State of New Jersey, of which company this station is a subsidiary. This plan will result in the public good and benefit by improving business relations between the trade and public, improving programs and stimulating public interest among the public in their local tradesmen, and generally improving broadcasting to and receiving by the public not only from the local standpoint but also otherwise."

Will Mr. May please be sworn?

D. Winthrop May was called as a witness and, being first duly sworn, testified as follows:

Direct examination.

By Mr. Munter:

Q. Your name is D. Winthrop May. A. Yes, sir.

Q. And you are the deponent in the affidavit that I have just read? A. Yes, sir.

Q. Mr. May, do you know inspectors Bogardus and Manning? A. I know Inspector Bogardus. I do not know Mr. Manning. I remember the name.

Q. On May 17, 1928, were you connected with Station WTRL? A. I was.

Q. Were inspectors Bogardus and Manning at
136 that time inspecting our station? A. I know nothing
about it. I have had no report about it.

Q. On that day do you know whether the apparatus was partly dismantled and in an inoperative condition? A. Our apparatus at the station might have had some changes. In other words, we might have removed a meter. I don't know a thing about this, but a meter might be taken out for moving a hand if it is off a point, or something like that. There might have been two meters out. Not knowing anything about this, if I had had notice a few days ago I would have looked it up. I tried to find out something about it, but it has not been out of working condition at any time.

Q. The charge here is that there is no evidence to show that it has been used for a long period of time. Is your station being used? A. It is being used. We have an affidavit and I have letters here from the public.

The Chairman: Is it being used now? The Witness: Yes, sir.

The Chairman: Was there an omission to use it during that period?

By Mr. Munter:

Q. On or about your birthday, May 17? A. It has been used right along. It has been used an average of three times a week ever since we have been licensd.

Q. Has there at any time been a month during
137 which the station has not been operated? A. Not
over a couple of days at any time.

Mr. Pratt: How many hours a week would you say the station has been operated?

The Witness: It is pretty hard for me to answer. I might say this. This station we have not tried to put on the air on what you might call a regular commercial basis. In the first place, the station is over in Midland Park, New Jersey, at a point where it would be impossible to bring talent into that community at any regular intervals, because it is off the main thoroughfare. That is the reason that about two years ago, as your records will show, we asked for an increase in power at that time, and you may have later had some additional requests. We wanted to move the station to a more advantageous point where it could be used on a regular commercial basis. We have operated the station regularly. We have given programs. They surely do not compare to WEAF; I do not make any such claim, because you cannot do it on 15 watts.

The Chairman: You have a license and, with that license, a frequency and power assigned, and a schedule of time. Have you been employing that time in the station? A. Yes.

The Chairman: All of it?

The Witness: Not all. We could not use all of it. Practically no station in the metropolitan section is using all its time.

By the Chairman:

Have you been employing it at regular times so
138 that the public might know and tune in on you at
such times? A. Yes, sir.

Q. Have you such a schedule that the public has become familiar with it? A. There is not a newspaper in that vicinity. The station is located where there is no way of publishing a program.

Q. These frequencies are desirable by some people for public use, and if you only use it in—— A. If you will refer to the correspondence you will see that we have a studio in Newark where we have been paying rent for a year and a half to keep the station in there, and we have been waiting on this Commission for hearing.

Q. It is a question of how you have used the present license. A. We have gone on the air according to affidavits here an average of three times a week.

Q. My question is, Have you gone on regularly? Have you established a regular audience and gone on regularly? A. We have, sir. May I read this, if you please? It is Hogencamp's sworn statement, Exhibit 4:

"I have been operating said station since the issuance of license to it dated December 18, 1926, No. 3025, down to the present time.

"This station has been 'on the air' during that period on an average of three times a week, down to the present time, with various kinds of programs including sport talks, musical programs, patriotic programs, religious programs and technical programs and have catered to things of interest to people in and about Midland Park, New Jersey, which is the service range of the station by reason of the low wattage of this station." 139

Does that answer it, sir?

By Mr. Pratt:

Q. Do you use phonograph records? A. Yes. That is all you can get out that way.

The Chairman: Some gentlemen seem to think that they can take one of these licenses and put it in their pocket and not use it. I am not saying that that is true as to you.

The Witness: I am in the radio business. We need broadcasting, but we need good broadcasting and I for one want to give good broadcasting, and we are only waiting for the Commission to grant us power to do a real job.

Mr. Munter: The question is, whether you have been using your license.

The Witness: We have; yes.

By Mr. Munter:

Q. (Reading) "At the present time"—that was on the 17th of May—"the room which houses the radio equipment is being used by Mr. Hogencamp, Sr., as a room for charging storage batteries, and also for raising dogs." A. I will just tell the whole story on that.

Q. Make it as short as possible. A. I will.

The room next to the room where we have our transmitter we use as a technical room. Our operator is somewhat of
a "ham," In other words, when he is not operating
140 the station he is doing experimental work. He also
has charged storage batteries for the station and takes a few jobs in this other room. He had three pups while he was not working in there for a couple of days, when the station was not on the air, and he said he had a box there with the pups in the box. I would like to know what is wrong about that operator having a couple of pups in there.

I might say this, and you can overrule me if you want to. The press was full of this story. I might say it was given out by Commissioner Caldwell, because his name was mentioned in connection with it. I think it is rotten and rank, and I put myself on record. Every paper in the country carried this story about the pups.

The Chairman: A licensed operator of a concern in the public interest ought to be thoroughly devoted to his mission.

The Witness: When the station is off the air?

The Chairman: I suppose the pups would be there when the station was on the air, if they were there when it was off.

The Witness: A mountain was made out of a molehill.

The Chairman: Were the pups born in there?

The Witness: I don't think they were. I don't know. My God! I am not going to make a statement to that effect.

By Mr. Munter:

Q. Address yourself to the public need, convenience and interest to Midland Park, New Jersey, of this station. What is the fact about that? A. There is no station in or around Midland Park.

By the Chairman:

141 Q. Where is this place? A. It is in Bergen County,
about——

Q. Close to Red Bank? A. No; it is in the northern part of the state. It is between Paterson and New York.

Q. Englewood? A. Englewood comes in between. It is an out of the way place.

Q. How far back from the Palisades? A. Roughly, I would say twenty miles. I think that is just about right. I am not sure, exactly.

By Mr. Munter:

Q. How many listeners-in are there in that immediate community? A. Around that part of the country there must be at least seventy-five to one hundred thousand listeners-in.

Q. And since this incident through the publication of these articles have you received communications from these persons in and about Midland Park? A. Yes.

Q. About how many? A. I have letters here from people around Midland Park and others, amounting to about a hundred and fifty letters, if I remember correctly.

Mr. Munter: We offer those letters in evidence to show public interest.

The Chairman: We will take his statement that he has received a hundred and fifty letters, but we will exclude the letters.

142 Mr. Munter: That is all we want.

By Mr. Louis G. Caldwell:

Q. Are any of them unfavorable? A. I do not think so.

Mr. Munter: You know, do you not?

The Witness: No; there is no unfavorable letter.

By Mr. Munter:

Q. Is there any need for local talent and broadcasting in that vicinity? A. There is absolute need for a station at that point.

Q. Describe the need. A. There is no station covering that part of the county. WTRL is the only station in Bergen County outside of one station which, I believe, has a studio in New York City and which is not a Jersey station. I am not sure of that; I believe that is one of those stations.

We proposed and our idea was to give the people in Bergen County an honest-to-goodness program by taking our talent either from New York City or Newark. That was why we had our studio in Newark. But it was impossible to carry the lines from Newark on 15 watts, and that is why we never opened up our Newark studio.

The only way to give the people of that territory service is by carrying the talent over long lines from a studio at a remote point; and that is the reason we had the studio in Newark, but we never operated it because it would not pay to carry it over there on 15 watts; and that is why we have been operating for Midland Park only. That is not
143 on a railroad; it is not on a trolley line, and there is no way of getting talent in there from the metropolitan section of New York.

Mr. Munter: Are there any other questions that the Commission would like to propound to Mr. May?

By Mr. Louis G. Caldwell:

Q. Do you keep any record of the hours you are on the air? A. Yes, sir; I have some schedules.

Q. Do you keep them in the form of a radio record of any sort? A. We have regular sheets we make up.

Q. Have you those with you? A. No, I have not.

Mr. Munter: Will you be glad to submit them if the Commission wants them?

The Witness: Yes.

The Chairman: And copies of your programs. Put in two or three of them.

By Mr. Louis G. Caldwell:

Q. You stated that you are on a regular schedule? A. We operate on a fairly regular schedule.

Q. State what that schedule is. A. About three nights a week we go on for between one hour and two hours.

Q. Which nights of the week? A. We changed it. For a while it was Mondays, Wednesdays and Fridays. Then it was changed around. Frankly I cannot tell you that.

144 By the Chairman:

Q. Did the public have notice in advance of your change? Did you make an announcement to the effect that you had been operating on certain nights and telling them to tune in on you on other nights? A. The only way we can give it to the public is over the radio.

Q. Did you give it to the public? A. Yes.

Q. It was due to the public. You are a trustee, with your license. A. I understand that, sir.

By Mr. Louis G. Caldwell:

Q. On what nights of the week is it operating right now? A. I believe it is operating Tuesdays, Thursdays and Fridays. I am not up at the station myself.

Q. What are your duties? A. I am secretary of the company. I have helped finance the property and take care of a lot of the work. The station is quite a distance from where I live.

Q. How often do you visit the location of the station? A. I run up there an average of twice a week, roughly; not while they are operating, but usually during the day. The station only operates at nights.

Q. How much of a staff do you have there? A. One operator who operates and announces.

Q. Who is he? A. Hogencamp.

145 Q. That is the one who has made the affidavit? A. Yes, sir.

By the Chairman:

Q. What sort of a licensed operator? A. You have special broadcast licenses. It is marked "Broadcast, Second Class Form." He states in his affidavit:

"I hold a radio operator's license, commercial second class, issued by the Department of Commerce, Radio Division No. 423 valid for the operation of a broadcasting station, dated July 26, 1927."

By Mr. Louis G. Caldwell:

Q. You do not know, then, what days you are operating this week? A. I do not know.

Q. What days were you operating last week? A. I do not know.

Q. The week before. A. I will be glad to forward all the records.

Q. Do you know as to any week in the last year? A. Personally, I do not. We will gladly forward the information to you.

Q. How much do you pay your talent per week? A. We pay nothing for talent whatsoever.

Q. Where do you get your talent? A. Most of our talent is reproductions, because on 15 watts in the metropolitan section you cannot bring talent.

Q. So called canned music? A. Yes, sir.

146 Q. That is practically all of it? A. We have sport talks.

The Chairman: How much of an audience does that 15 watts reach?

The Witness: That is hard to say. It depends upon how much power the other stations are using.

The Chairman: You say you have a license, but are not doing anything now but reproducing phonograph records.

The Witness: No; I beg your pardon. I will read it again:

"This station has been 'on the air' during that period on an average of three times a week, down to the present time, with various kinds of programs including sport talks."

The Chairman: I understood you to answer Mr. L. G. Caldwell that it is mostly phonograph reproduction.

The Witness: I say, a good part of it is; but we have also sport talks, musical programs, patriotic programs, religious programs and technical programs.

By Mr. L. G. Caldwell:

Q. Can you name me an example of one of those? A. I cannot say. I am not operating the station myself. If you would like me to I would like to file proof.

The Chairman: So far as I am concerned, where any one has one of these licenses in the public interest, I want him to prove that he is using it in the public interest; and we will give you and Mr. Munter ample time to make up your case.

Mr. Munter: I think, may it please the Commission, it is apparent that Mr. May is not as familiar with the details of the operation as I would like him to be.

147 The Chairman: You may produce somebody who is familiar.

Mr. Munter: I might have coached him if I had thought it would be fair to the Commission; but I did not think you would want second hand information. I shall be glad to submit affidavits here as to the programs they have been furnishing, as well as giving you the exact hours in which they have been broadcasting.

The Chairman: You do not think that a man ought to have even 15 watts which will extend to the full community, including thousands of listeners, and only use it just now and then?

Mr. Munter: I agree with you, sir.

The Chairman: That may not be the fact here.

Mr. Munter: No, it is not a fact. How can it be a fact, when I have more letters here than I have clients, and I have been practicing for almost ten years here in this jurisdiction. That is quite a batch that I have here.

By Mr. L. G. Caldwell:

Q. How did you get these letters? A. In what way do you mean?

Q. Were they solicited? I do not ask whether they were solicited by you, directly or indirectly, or anybody else? A. No, sir; the letters were not solicited.

Mr. Munter: May I just start to read the beginning of three or four at random just to show you how they start off?

The Chairman: Oh, no.

Mr. Munter: There has been no solicitation. They
148 are all spontaneous.

The Chairman: The Commission is familiar with letters. They come here by the hundreds and thousands every day. We have the psychology of letters both pro and con.

By Mr. L. G. Caldwell:

Q. What business were you in before? A. I am still in the radio distributing business.

Q. Is your station run to advertise your business? A. Over the station?

Q. Yes. A. Our business is spread over a big territory. It would not do us much good.

Q. You mention your business over the station? A. Yes.

Q. You had another station before this? A. Personally, you mean?

Q. Have you been interested in any other station? A. I have held some stock in some stations.

Mr. Munter: Do you have stock in the Radio Corporation of America? A. Yes, sir.

By Mr. L. G. Caldwell:

Q. What other station have you been interested in? A. Two or three broadcast stations?

Q. You have had a controlling interest in their broadcasting? A. No; I would not say controlling.

Q. What other stations have you had an interest in? A. I hold stock in WEWM and WGCP.

149 Q. Did you not have a controlling interest in either one of these? A. Not individually; no, sir.

Mr. Munter: May I at this point ask how this relates to this proceeding?

Mr. L. G. Caldwell: I think my next question will disclose it.

By Mr. L. G. Caldwell:

Q. You have sold out your interest in both of those, have you not? A. The same as I sell stock every day. I sold some Freshman stock this morning.

Q. You have been engaged in speculating in broadcasting stations? A. No, sir, I have not. I make that statement very emphatically. In fact, I never made any money in broadcast stations. It has cost me a plenty, the little stock I have had.

By Mr. Pratt:

Q. With regard to the incorporation of the Technical Radio Laboratory, are you familiar with the history of this station? A. The station originally was licensed in the name of Technical Radio Laboratory. It was not a corporation, and then on one of the succeeding licenses the station had been incorporated and the license was issued to the corporation.

Q. When was the station incorporated? A. I cannot tell
exactly. If you have the old licenses it will tell you.
150 The license shows when it was incorporated, does
it not?

Q. No. A. I cannot say exactly.

Q. Did you state that this corporation is a subsidiary, in the affidavit which has been read here? A. Some of the stock—our corporation held some stock in the Technical Radio Laboratories. We consider it a subsidiary to a certain extent.

Q. The Technical Radio Laboratory is a subsidiary of what company? A. D. W. May, Incorporated, to a certain extent only.

Q. Does D. W. May, Inc., hold a controlling interest? A. No, sir. It is divided up. Hogencamp is the real active head of the station.

Q. How long have you been connected with it? A. Since its incorporation.

Q. Did you have any connection with the station prior to its incorporation? A. Yes.

Q. State the extent of it. A. I had advanced money to Hogencamp to help him to finance all the way through, practically, from almost the beginning, and then my attorneys advised me that it was better to incorporate in case anything should happen, and that is why it was incorporated.

Q. Can you give the approximate amount of money you had advanced to this station prior to its incorporation, a
rough estimate? A. Two or three thousand dollars,
151 roughly. That is very roughly.

Q. When did the station go on the air? Was it December 18, 1926, the first time? A. I believe that is right.

Q. Was that during the breakdown of the law? A. All I know is that a license was issued to us by Secretary of Commerce Hoover, given to us on request. What the legal side of it is I do not know, except it was issued as a license.

By Mr. Munter:

Q. You never broadcast without a license? A. No, sir.

By Mr. Pratt:

Q. Did you make application for a license prior to the time you made application for the—— A. I think you will find a letter on that. All the back correspondence is with the Secretary of Commerce's office.

The Chairman: What day suits you for the continuation of this case?

Mr. Munter: Any time that suits the convenience of counsel, except in the month of September. I expect to cool off a little bit then.

The Chairman: I mean, this week or next?

Mr. Munter: I take it that all this week you will be engaged in other hearings.

The Chairman: But we will continue this hearing until another day.

152 Mr. Munter: Any time after next week.

The Chairman: No. We will not go over next week.

Mr. Munter: Here is the situation I am in. Harry Green, noted New York attorney, is chief counsel for Mr. May, not only for this corporation but on other matters, and we had expected to have him down here today, and I would like to have as much time as possible so that I can arrange to have him here if he can come down here.

The Chairman: Next Monday?

Mr. Munter: At what hour?

The Chairman: The schedule is pretty large for Monday, but we will crowd in a hearing on that day.

Mr. Munter: Monday hardly gives me enough time. I may have to go up to New Jersey myself.

The Chairman: Wednesday of next week.

Mr. Munter: At what hour?

The Chairman: Be present at 10 o'clock. We cannot tell when you will be reached.

Mr. Munter: That is all right.

The Chairman: You may submit whatever evidence you have, and counsel for the Commission may introduce some evidence.

(At the request of Mr. Fetzer, with the consent of Chairman Robinson, the testimony of Mr. Kelly in the case of WIBS is included in the cases of stations WKBO, WHPP and WTRL, as follows:)

* * * * * * *

Whereupon *Ralph J. Kelly* was called as a witness on behalf of Station WIBS, and having been first duly sworn by the Chairman, testified as follows:

Direct examination.

By Mr. Fetzer:

Q. Mr. Kelly, what is your name? A. Ralph J. Kelly.

153 Q. And where do you reside? A. Washington, D. C.

Q. Have you a home also in New Jersey? A. No, my home is in Saratoga, New York.

Q. You are the secretary of United States Senator Edwards, are you? A. Yes.

Q. Are you acquainted with the conditions in Hudson and Union Counties, New Jersey? A. Only in so far as I get the situation from petitions and letters from individuals and trade organizations and civic bodies, etc.

Q. Have you had any petitions or letters favorable to Station WIBS? A. Yes, probably fifty or sixty within the last six months.

Q. Did you have any resolutions or letters from groups of people? A. Yes, nearly every letter is accompanied by a resolution passed by some trade or civic body or patriotic body or church body, Y. W. C. A., some such organization.

Chairman Robinson: I do not think it is necessary to go into that, because that is true of every station under review.

Mr. Fetzer: Well, if the Court please, while that is true, it is not on the record of this particular station, but each one stands on its own feet.

Chairman Robinson: I am willing for you to inquire of him what, through his service as secretary to Senator Edwards, he knows about this station.

By Mr. Fetzer:

Q. What did you do with those letters and petitions? A. Most of the resolutions and petitions were filed with the Federal Radio Commission through Mr. Commissioner Caldwell. 154

Q. Is it your opinion that the condition is a crowded condition from the standpoint of radio broadcasting now existing in this county? A. No, rather just the other way. Since radio has been developed, and since the passage of the original Dill-White act, it has been the reaction of the Senator's office that New Jersey has never equalled her quota in either wattage or wave length allocations. That most of it has been taken over by the larger broadcasting stations operating their studios on Manhattan Island, and having their broadcasting station some place in Northern New Jersey, thus depriving New Jersey of her real bona fide allocation. In other words, the allocations were credited to prima facie New Jersey broadcasting stations when, as a matter of fact, they should have been attributed to the State of New York.

Commissioner Caldwell: That is all changed under the new 1928 law.

The Witness: I understand the Davis amendment to the 1927 act does away with that.

Commissioner Caldwell: Yes.

By Mr. Fetzer:

Q. Have you received among any of those letters or communications any complaints? A. Not one. I never received a complaint against any station in New Jersey. All the complaints received have been against interference by these larger New York stations.

155 Chairman Robinson: May I ask this question now. The usual appeal to a senator or a congressman is for help, and not ordinarily a complaint, anyhow. It is simply for help, is it not?

The Witness: No, I would not say it was for help. They are very seldom asked for help. Simply register their reaction with the Senator. Not one in ten letters are that way.

Chairman Robinson: I am speaking not only as to radio but things generally.

The Witness: That is true.

Chairman Robinson: Usually the appeal to a senator or congressman is for aid rather than complaint?

The Witness: Yes. The general understanding of this position is that that is what a senator is sent here for, as a clearing house.

By Mr. Fetzer:

Q. Are you here at the request of Senator Edwards? A. I am here representing Senator Edwards, speaking for him. I am here representing all stations in New Jersey that have been notified that they must leave the air by August the 1st.

Q. Is it your opinion there should be a stronger and more powerful station in Northern New Jersey than now exists? A. The Senator feels that there should be at least one powerful station in Hudson County.

By Chairman Robinson:

Q. He does not mean high power, does he? A. I mean if the Radio Commission sees fit to limit broadcasting
156 stations of Hudson County to one it should be a high powered station.

Mr. Fetzer: I think that is all, Mr. Chairman. I would like to make this motion at this time, that the testimony of Mr. Kelly be available to all of the broadcasting stations of Northern New Jersey that have appeared before this Commission.

Chairman Robinson: We are willing to cooperate with you on that because it saves time.

Mr. Munter: And may I supplement that by saying: And those who will hereafter appear before the Commission?

Chairman Robinson: Do you see any objection (addressing Commissioner Caldwell)?

Commissioner Caldwell: No.

Mr. Fetzer: That is all, Mr. Kelly. Thank you very much. I make this statement on the record that Mr. Godfrey L. Munter of the Mills Building, Washington, D. C., is of counsel appearing in these cases. And I would name them now. WIBS, WKBO, WHPP and WTRL. We want this testimony of Mr. Kelly on all of the cases, if they so desire, or all of the stations that are before this Commission from the State of New Jersey.

Chairman Robinson: Well, as far as applicable. Now, I do not know what these stations are.

Mr. Munter: We had better give them the stations.

Chairman Robinson: I assume they are all right together. All right. I was going to say if you had a station down in Camden, for instance, it might not apply.

The Witness: If the Commission please, I want it understood that the Senator is interested in New Jersey
157 receiving its proper wave length allocation as a State and also its proper power.

Chairman Robinson: That is not the business on hand today.

The Witness: And of course he is interested in individual stations in so far as they represent individual localities.

Chairman Robinson: There is just this one issue now about any station that is here today, or that has been called to these hearings. What public service is it rendering? I will use the word "service" instead of those three terms "interest, convenience and necessity." We want to know, what service are you rendering to the public? And we will endeavor to have you prove that by facts and not by petitions or letters or anything of that kind. Why? Because one person may say it is a public service station, but that is a mere conclusion. If he will state the facts we may come to the same conclusion.

Mr. Fetzer: In the main I am quite in agreement with the ruling that the Commission has made in that particular issue.

Chairman Robinson: I have gone I think pretty far in ruling that we might even touch the popularity of your station by saying what you heard about it. Now I doubt if the Court of Appeals would admit that. I do not think they would admit it at all. But we can afford to be fair and rather liberal here.

Mr. Fetzer: I believe that is all I have to ask Mr. Kelly, and I thank you very much.

(Thereupon, Mr. Kelly was excused as a witness.)

158–160 The Chairman: The Commission stands adjourned until 10 o'clock tomorrow morning.

(Whereupon, at 5:30 o'clock p. m., an adjournment was taken until tomorrow, Thursday, July 12, 1928, at 10 o'clock a. m.)

161 Federal Radio Commission, Washington, D. C.

Office of the Chairman, Interior Department Building.

Wednesday, July 18, 1928.

The Commission having resumed at 2 o'clock p. m., and having begun and concluded hearings as to other stations, then called Docket No. 14, Station WTRL, Midland Park, New Jersey, under General Order No. 32, this being a continuation of the hearing of this case begun on Wednesday, July 11, 1928.

Present:

Commissioners: Ira E. Robinson, Chairman; Eugene O. Sykes, Sam Pickard, Harold A. Lafount.

General Counsel: Louis G. Caldwell.

Assistant Counsel: E. W. Pratt.

Official Shorthand Reporters: Hart, Dice & Carlson.

On behalf of Respondent: Godfrey L. Munter.

Mr. Pratt: WTRL, Docket No. 14, continued from Wednesday, July 11, 1928.

Chairman Robinson: You may proceed, Mr. Munter. Have you anything?

Mr. Munter: Yes, we have a supplemental affidavit of Mr. Harold C. Hogencamp, more specifically and in detail denying and meeting the charges contained in the
162 alleged report of Messrs. Bogardus and Manning.

Chairman Robinson: Have you showed that to Mr. Caldwell?

Mr. Munter: I have not.

Mr. Caldwell: Mr. Hogencamp is not here, I take it?

Mr. Munter: He is not here, no.

Mr. Caldwell: Is there any reason stated in the affidavit why he does not appear to defend these charges?

Mr. Munter: I will say the reason——

Mr. Caldwell: No, is there any reason stated in the affidavit?

Mr. Munter: No, there is no reason stated in the affidavit, but I would like to state it for the Commission's benefit on the record.

Mr. Caldwell: I do not have any objection to the affidavit.

163 Mr. Munter: I am calling your attention also to the exhibits. You have no objection to those, I take it?

Mr. Caldwell: No, I have not.

Mr. Munter: The Commission recalls that last time there was some question as to this station having been on the air at all, and having had regular programs, and as to having been examined at certain times. Now here is the supplemental affidavit of Harold C. Hogencamp as follows:

"State of New Jersey,
County of Essex, ss:

"Harold C. Hogencamp, of full age, being duly sworn according to law, on his oath deposes and says, that:

"1. I am President and Operator of Technical Radio Laboratory, of Midland Park, holder of radio station broadcasting license, call letters W-T-R-L.

"2. I hold a Radio Operator's license, Commercial Second Class, issued by the Department of Commerce, Radio Division #432, valid for the operation of a broadcasting station, dated July 26, 1927.

"3. I have been operating said station since the issuance of license to it dated December 18, 1926, #3025, down to the present time.

"4. Attached hereto and made a part hereof, and marked Exhibit 'A,' is a copy of the regular programs of W-T-R-L for several weeks during the past months, which list is picked at random, and no attempt whatsoever is made to choose the best ones."

164 In consonance with the Commission's suggestions, which I have observed here from time to time, that you do not want all these programs in the record, we have only brought a few random ones, as the affiant says. On Sunday, January the ninth, 1927, for instance, from two to four o'clock p. m., there is a religious program, organ music.

On Wednesday, January 12th, from seven to seven-thirty p. m., sport talk. From seven-thirty to nine p. m., Miller's orchestra.

Then on Sunday, November 6, 1927, from four to five p. m., religious music.

Tuesday, November 8th, seven to seven-thirty p. m., sport talk and from seven-thirty to nine p. m., operatic selections.

Friday, November 11, seven to seven-thirty p. m., sport talk and news of interest. From seventy-thirty to nine p. m., popular songs.

Saturday, November 12, from seven to seven-thirty p. m., football results. And so on down the line. I am going to offer this in evidence so you will not have to listen to me much longer on that. (Continuing reading.)

"5. The Radio Commission contends that on a visit to our station on May 17 of this year, they found the station was not operating and in a dismantled condition. Before the inspection in dispute," * * * May I add—I see Mr. Manning in the room here, so it is all right. And Mr. Batcheller. (Continuing reading:)

"Before the inspection in dispute, the station was inspected on two occasions, on June 10th, 1927, and 165 July 7th, 1927, by one of the inspectors of the New York office of the Commission. The New York office, knowing that the station operated only at night, and that it would be impossible to find me there in the daytime always telephoned in advance to arrange for an appointment if they desired to inspect the station in the daytime. If the appointment was made, I arranged to meet the inspector, and the station was thoroughly insepcted. It is absolutely imperative, in order that an inspection can be made, that the operator be on hand, so that the transmitter can be started up. It is impossible to inspect a station unless the transmitter is operating, so that the frequency, and other things, can be checked.

"6. Owing to the fact that our schedule, as shown in the attached sheets, clearly shows that our station does not operate two days in succession, but on practically alternate days, we many times make minor adjustments and necessary changes to our apparatus on the days that we are 'off the air,' always being careful never to change the oscillating circuit, except to adjust the condensers, in order to keep on the proper frequency, and I might further state that our station is equipped with the very latest Constant Frequency Meter, to keep our wave within the specified range."

"7. The Commission further contends that W-T-R-L was not in operation, and had no regular transmission periods. The inaction of the Commission in not examining the station between July 7th, 1927, and May 17th, 1928,"—
166 That is nearly a year that the station was not examined—(continuing reading:)
"seems a bit peculiar, in view of the fact that we had an application on file for increase of power and change in frequency, during the entire period. If the Commission for one moment thought that the station was not 'on the air' they surely would have had sufficient proof to show that the station was not operating during the time the application was on file." In other words, for a whole year this station was not examined, during which time there was an application here, and being pressed by them here, and also in New York by Mr. Mann, his New York attorney, for an increased wattage and a better wave length. Yet during that whole period, between July 7, 1927, and May 17, 1928, the station was not examined. (Continuing reading.)

"8. The Commision further contends that we did not operate on May 17th, 1928, at 1:00 o'clock in the afternoon, when an inspection was made by two of their inspectors, at which time the New York office, from which they were sent, knew that no operator would be on hand, and that it would be impossible to start up the transmitter."

In other words, this station was examined at one o'clock in the afternoon when the inspectors knew that the only time the station was as a matter of fact only on the air on alternate days, and then generally in the evening, and that the station would have to be started up for them to make these tests. We submit that that was not a fair
167 test to come around at one o'clock in the afternoon on a day that the station was not in operation, during a time when it was not on the air. (Continuing reading:)

"The Commission also contends that the station has not been operating during the past months. In answer to same, I annex hereto and make a part hereof letters of H. D. Payne, of the Modern Auto Service of Midland Park, New

Jersey, Ethanier Boyce, Collector of Taxes of Midland Park, William Touw, President of the Board of Health of Midland Park, and Fred G. Howard, which letters are marked Exhibit 'B.' "

Which counsel has consented to receive in evidence, and the first letter is as follows, from Mr. H. D. Payne.

"I understand that the Radio Commission claims that your station——"

Mr. Caldwell: One minute. Are those letters attached to this affidavit sworn to as to the truth of the statements themselves in the letters? The only exhibit you called my attention to were the programs. I did not see any letters.

Mr. Munter: Suppose you look at these, Mr. Caldwell. They do not seem to be regular in form, but they bear the signature of a notary public and the seal.

Mr. Caldwell: Well, I must object unless it is shown somehow that the affiants swear to the truth of the contents of the letter in each case. And there is nothing indicating that the affiant did in any case.

Mr. Munter: The fact seems to be, may it please the Commission, that these letters purport to have been 168 sworn to before a notary public, but they only bear the seal and the signature of the notary.

Chairman Robinson: What are the contents of the letters?

Mr. Munter: The contents of the letters, in brief—there are six of them, from the Mayor and the Collector of Taxes, and so on, that they want the station on the air, and that they perform public service.

Mr. Caldwell: None of them make the statement that they heard it?

Mr. Munter: Yes, indeed.

Mr. Caldwell: Unless the notary is willing to say that they swore to the truth of the statements contained in the letters, I will object to them. If he does, I will not.

Chairman Robinson: That is, anything in the letters containing facts that are admissible to the issues in the case.

Mr. Munter: Yes.

Chairman Robinson: What are the facts?

Mr. Munter: One pertinent fact is that the charge here is that this station has not been on the air. Now in addition to producing the programs here that have been rendered over the station, we have a number of—I will call them quasi-affidavits. I did not get them myself. I do not know how they were sworn to. They were certified to by a notary public, but the contents are there, that the people heard programs over WTRL and they enjoyed them.

Chairman Robinson: I know, but continuously heard them?

169 Mr. Munter: Well, on certain days they say here. On certain days that the Commission reports here that the station was not on the air.

Chairman Robinson: Let the affidavit be tendered and the Commission will take under advisement how proper it is when we reach the consideration of the case. We will admit the proper parts of it.

Mr. Munter: There was a charge here that the batteries were being recharged in this station on May the 17th. Mr. Hogencamp says this about the charging of the batteries:

"11. The inspectors from the Radio Commission also claim that our station was being used for the purpose of recharging storage batteries. It is absolutely essential" he says, "that we recharge the batteries used in the operation of our station, and at the time alleged inspection was made, the batteries for use at our station were being charged."

The batteries used for the station. There is no denial of it.

Now with reference to the charge about the dogs, he says this:

"10. The inspectors from the Radio Commission claim that our station was used as a 'dog kennel.' I might say that for a short period, several small puppies were kept in the same building, at the experimental end of our broadcasting station. They were in a section separated from the apparatus, and were in no position to interfere with the operation of the station. Our studio is not in the same building where the puppies were seen, but is in a building quite some distance from the transmitter." 170

There are other matters, certain other matters in the affidavit that the Commission can peruse when it reaches the case.

I now offer the affidavit in evidence with the exhibits, and ask that it be marked Petitioner's Exhibit No. 6.

Mr. Caldwell: I have no objection, except as to the exhibits which are unsworn to, and as to which I understand the ruling is reserved.

(The affidavit was received in evidence with the exception of the unsworn letters, and marked, "WTRL Exhibit 6."

The balance of the affidavit which Mr. Munter did not read, is as follows:)

"9. If reference is made to our regular program sheets, heretofore annexed hereto and markd Exhibit 'A,' it will readily be seen that our regular program was 'on the air' during the period the Commission contends our station was not operating."

* * * * * * *

"12. I feel that the Radio Commission is retaliating against this station by their actions during the past few months, because our Mr. May had the temerity to appear before the Senate Committee in opposition to the recent confirmation of Commissioner O. H. Caldwell. All the charges set up against the station have arisen since that time, and seem to be an endeavor to injure us and practically wipe out our existence.

(Sgd.) HAROLD C. HOGENCAMP.

171 "Sworn and subscribed to before me this 17th day of July, 1928.

(SEAL.) DOROTHY F. WALTER,
Notary Public of New Jersey."

"EXHIBIT 'A.'

Program of WTRL Week Ending January 15, 1927.

Sunday, Jan. 9, 2:00 to 4:00 P. M. Religious Program.
Organ Music.
Wednes., Jan. 12, 7:00 to 7:30 P. M. Sport Talk.
7:30 to 9:00 P. M. Miller's Orchestra.
Friday, Jan. 14, 7:00 to 7:30 P. M. Sport Talk.
7:30 to 8:00 P. M. Dance Music.
8:00 to 9:00 P. M. Popular Songs.

Program of WTRL Week Ending June 4, 1927.

Sunday, May 29, 9:30 to 10:30 A. M. Religious Songs.
12:30 to 1:30 P. M. Popular Music.
3:00 to 4:00 P. M. Memorial Day, Patriotic Program.
Wednes., Jun. 1, 7:00 to 8:00 P. M. Baseball Scores.
Dance Music.
Friday, Jun. 3, 7:00 to 8:00 P. M. Baseball Scores.
Dance Music.

172 Program of WTRL Week Ending November 12, 1927.

Sunday, Nov. 6, 4:00 to 5:00 P. M. Religious Music.
Tuesday, Nov. 8, 7:00 to 7:30 P. M. Sport Talk.
7:30 to 9:00 P. M. Operatic Selections.
Friday, Nov. 11, 7:00 to 7:30 P. M. Sport Talk and News of Interest.
7:30 to 9:00 P. M. Popular Songs.
Satur., Nov. 12, 7:00 to 7:30 P. M. Football Results.

Program of WTRL Week Ending February 26, 1928.

Monday, Feb. 20, 7:00 to 7:15 P. M. Sport Talk.
7:15 to 8:00 P. M. Dance Orchestra. (Records.)
Wednes., Feb. 22, 2:00 to 4:00 P. M. Washington's Birthday Program.
Friday, Feb. 25, 7:00 to 8:00 P. M. Sport Talk and News of Interest.
7:30 to 8:00 P. M. Radio Talk (Discussion of Electric Receivers).
8:00 to 9:00 P. M. Classical Songs.

Program of WTRL Week Ending May 19, 1928.

Sunday, May 13, 2:00 to 4:00 P. M. Religious Songs and Music.
Tuesday, May 15, 7:00 to 7:30 P. M. Baseball Talk.
7:30 to 8:30 P. M. String Music.
173 Friday, May 18, 7:00 to 7:30 P. M. Sport Talk.
Baseball Scores.
News of Interest.
7:30 to 8:00 P. M. Violin Selections.
8:00 to 9:00 P. M. Dance Music.

Program of WTRL Week Ending July 14, 1928.

Sunday, July 8, 6:00 to 7:00 P. M. Organ Selections.
Tuesday, July 10, 7:00 to 7:30 P. M. Baseball Scores.
Sport Talk.
7:30 to 8:30 P. M. Operatic Selections.
Friday, July 13, 7:00 to 7:30 P. M. Baseball Scores.
Sport Talk.
News of Interest.
7:30 to 8:30 P. M. Dance Music."

Mr. Munter: May I ask now, Mr. Caldwell, if you would let me see the original report of Messrs. Bogardus and Manning?

Mr. Caldwell: I do not have the original report. If you mean the report from Inspector Manning to Mr. Batcheller? Both of them are here if you want to question them after we have finished with them.

Mr. Munter: Have you the report?

Mr. Caldwell: We have the letter, of which you already have a copy.

Mr. Munter: What I would like to see is the report from Messrs. Bogardus and Manning.

Mr. Caldwell: That is not here. You made no demand at the prior hearing to produce it, and we presumably could have if you had.

Mr. Munter: The demand last time was that all the records be produced, and also Messrs. Bogardus and Manning.

174 I am making no point about the absence of Mr. Bogardus, but in view of his absence, I think it is very important that we have their reports, because I cannot intelligently interrogate either Mr. Manning or Mr. Bogardus unless I have before me the reports which it is said they rendered to Mr. Batcheller.

Chairman Robinson: The report was in a letter that you yourself produced as a press release, which the Commission has never seen. Do you want the original of that?

Mr. Munter. May it please the Commission, the fact seems to be this. The letter marked "Petitioner's Exhibit 2," the press release, as it were, appears to be a part of a report made by Mr. Batcheller to the Department, from which it appears that Messrs. Bogardus and Manning made a report to Mr. Batcheller. What I am calling on the Commission to produce is the original report from Bogardus and Manning to their superior in New York.

Mr. Caldwell: I may explain to the Chairman that the only report received either by the Department of Commerce or in the office of the Federal Radio Commission, is this letter which has just been shown to counsel, and he has made no request at any time for records from the New York office, and if he had we could produce them. Now I submit it is a waste of time at this time to ask for those records. I think there will be nothing on the face of it that will be helpful to him inasmuch as this report to the Department of Commerce purports to cover the same subject matter as the reports to the Supervisor.

The Chairman: The Chair would see no reason
175 for producing this original letter, which is the report to the Radio Division of the Department of Commerce by Mr. Batcheller, who is in charge, and I suppose would very properly and officially make such reports to his chief upon the verbal statements of his assistants. It may have been done. I do not know. If you want the original of this letter it may be produced, but I see no reason except technically.

Mr. Munter: No, what I firmly believe is that there was never any such written report made by Messrs. Bogardus and Manning.

Chairman Robinson: Does it say written report?

Mr. Caldwell: It does not, Mr. Chairman.

Chairman Robinson: I do not know what the system is, but I should assume that assistant inspectors very often make verbal reports.

Mr. Caldwell: Very often.

Mr. Munter: What is the procedure about that, do you know, Mr. Caldwell?

Mr. Caldwell: About what?

Mr. Munter: About how these reports are handled.

Mr. Caldwell: Mr. Batcheller will be on the stand, and do you want me to state in advance his testimony? Sometimes memoranda are made and sometimes not, and usually are not kept.

Chairman Robinson: I suppose a letter of that character is written by the assistant for his immediate chief's signature. In other words, no doubt you can inquire of that, whether that is true or not.

Mr. Munter: Well, suppose we call Mr. Manning
176 on the stand and let him explain.

Chairman Robinson: Go ahead. We are going to introduce Mr. Manning.

Mr. Caldwell: If counsel wishes to put the witness on on his own responsibility, that will be satisfactory to us.

Mr. Munter: Yes, I think that we would like to know the fact in this case.

Mr. Caldwell: Mr. Manning had better go on.

Chairman Robinson: We are not going to draw the line much on responsibility. Stand up, gentlemen.

Mr. Caldwell: These two gentlemen here.

Chairman Robinson: Mr. Manning also.

(At this point the witnesses were sworn by Chairman Robinson.)

Mr. Caldwell: Mr. Chairman, before we go into this matter, though. In the line of facts that have just been covered by the affidavits I should like to ask Mr. May a few more questions.

Chairman Robinson: All right.

Mr. Munter: May it please your Honor, Mr. May has not been on the stand yet, and I object to his being cross-examined out of turn before we have completed our case.

Chairman Robinson: Well, I understand that this is a continuation of this case. Mr. May having been on the stand once may be examined further by either his lawyer or counsel for the Commission.

Mr. Munter: Very well, if the Commission rules that way it is all right with me. You have already been sworn.

177 Whereupon **D. W. May** was re-called as a witness and having been previously duly sworn, was examined as follows:

Cross-examination.

By Mr. Caldwell:

Q. Mr. May, after leaving the hearing which was held on your station last week, did you communicate to Mr. Hogencamp the necessity for making out a further affidavit? **A. I did, yes.**

Q. And no one else did but you? A. No.

Q. And any facts that were to be covered in that affidavit you communicated to him, did you not? A. No, I told him roughly what the charges were that the hearing on our case was tried, and told him what they claimed, and I asked him to make an affidavit up and get whatever other affidavits he could.

Q. Well, you told him what matters to cover in the affidavit? A. I told him what he was accused of and what our station was accused of by this paper handed out before our hearing.

Q. And you brought the affidavit from Mr. Hogencamp. A. Mr. Hogencamp brought the affidavits down to our office and I brought them down here, yes, sir.

178 By Mr. Caldwell:

Q. Did you have any part in the selection of the programs which are attached to this affidavit? A. No, sir; I had nothing to do with it whatsoever.

Q. Did you see Mr. Hogencamp when he was making up this record of programs? A. I did not, sir.

Q. Do you know what kind of a document or book he made that from? A. I didn't see him make that up, but I know he has a loose file that he keeps records in. He made it from that.

Q. In that loose file does he keep a record of the programs? A. He keeps all matters in that file.

Q. And he does have a complete record of his programs in that file? A. So far as I know. I would not really know exactly what he has in his file.

Q. What is Miller's orchestra? A. What is Miller's orchestra?

Q. Yes. A. I don't know.

Q. Have you ever heard it? A. Personally, myself?

Q. Yes. A. I have heard of a number of Miller orchestras.

Q. You do not know of this particular one? A. Personally, myself, no.

179 Q. What was the source from which you got the dance music mentioned in these programs? A. So far as I know, some are dance orchestras, and some dance records, mechanically reproduced.

Q. What dance orchestra? A. I don't know.

Q. Would you play any? A. I don't know.

Q. What religious program was broadcast over your station? A. I don't know the particular ones, but I know he has had talkers at different times.

Q. Personally, can you name a single one? A. No; not of special things on the program there. It is a special.

Q. Did you think it important to tell him it was important to show details when the charge was he did not have any of the things? A. I didn't tell him one solitary thing. I called him on the telephone and told him what was needed; I told him to prepare affidavits for us. I told him about the false charges brought by this Commission, due to one Commissioner's feeling against me personally for appearing against him personally at the Senate hearings.

Chairman Robinson: Just a minute, gentlemen.

By Mr. Caldwell:

Q. Is that what you told him? A. Yes.

Chairman Robinson: Now, Mr. Caldwell, and the witness: We are trying this case, and we will try it
180 fairly. And the Chairman feels that these charges growing out of the feeling has not any place here, because the Commissioners who are here have not any feeling about it. It will be determined on the actual facts, so please confine yourself to a statement of the facts, as interrogated by the Commission's counsel, and your own counsel.

By Mr. Caldwell:

Q. Can you give a single name of all the persons named in the programs on that day? A. Personally, I am not at the station.

Q. Can you give such a name? A. Can I give such a name?

Q. Yes. A. I have heard Mr. Hogencamp talk to these people. Maybe I can dig them out of here.

Q. See if you can (handing paper to the witness). A. From my memory, I can't. Well, so far as Sport Talks, I don't know his name, but it is one of the Paterson papers.

He is the sporting editor. I don't know. I heard Hogencamp talk about him.

Q. Did you hear him? A. No; I didn't hear him. And, also, so far as religious—there has been a couple of religious programs from one of the papers in Paterson. I don't know which one.

Q. You cannot name either the newspaper or the church? A. No; I am not sure of the church.

Chairman Robinson: I want to ask Mr. May a question.

181 Mr. Caldwell: All right.

By Chairman Robinson:

Q. Do you know the setup of your station? A. Of all stations?

Q. No; your station. You know its setup? A. Yes.

Q. Have you remote control to any church there? A. No; everything is broadcast from the studio.

Q. Has there been any solicitation by a minister for such church connection? A. There has been numerous requests, but it wouldn't pay, and wouldn't be justified to do it on 15 watts. All the gentlemen here that know about broadcasting know it wouldn't pay to run remote control broadcasting for 15 watts. In the first place, you haven't enough range to justify it, and it would be ridiculous to try to go, say, 15 or 20 miles to a church and bring over a special program from that church and put it on with indirect power with a lot more stations running with more power. You haven't enough listeners to justify that.

By Mr. Caldwell:

Q. From what church, if any, did you receive such a request? A. I, personally, don't know. He has told me.

Q. You, personally, have not received any? A. No, sir.

Q. And yet you are the owner of the station? A. I am not the owner—I do not claim to be. I am the business manager only. I am the secretary of the company
182 and business manager. In other words, I have——

Q. On page 36 of the record of your testimony at the previous session, when I asked you as to your interest in other stations, I asked you: "What other station have you been interested in?"

Mr. Munter: I object to any further testimony or questioning what Mr. May's testimony was about other stations. I understood the only inquiry here is whether the station should be continued in the public interest, convenience or necessity. I object to what he said at the other inquiry.

Mr. Caldwell: My object is, I want to give him a chance to correct his statement that he made at the other hearing.

Chairman Robinson: What is the reference?

Mr. Caldwell: There is a charge contained in the correspondence, or at least in the record of the station, that this man has been engaged in speculating in broadcasting stations, and that that is his chief interest in having any license at all.

Chairman Robinson: That would be pertinent enough if you can prove it.

By Mr. Caldwell:

Q. You answered you hold stock in WEWM and WGCP. A. Not hold, but I held stock.

Q. I asked you again, "Did you not have a controlling interest in either one of those?" and you answered: "Not individually; no, sir." Now, in the proceedings before the Senate Committee——

Mr. Munter: If the Commission please, I object 183 to any questions pertaining to the proceedings before the Senate Committee, unless we are given a chance to introduce the whole record before the Senate Committee.

Mr. Caldwell: Do you want to introduce that whole record?

Mr. Munter: If the Commission wants to go over that whole mud-slinging campaign.

Chairman Robinson: The Chair does not know what Mr. Caldwell's offer of testimony was.

Mr. Caldwell: I want to show a contradictory statement in his testimony now and then.

Chairman Robinson: Whose testimony?

Mr. Caldwell: Mr. May's, according to the record of his testimony.

Chairman Robinson: You may contradict that.

Mr. Munter: What was his statement here?

Mr. Caldwell: I want to call his attention to his statements.

Chairman Robinson: You can always show a contradictory statement made before some other tribunal under oath.

Mr. Caldwell: I am attempting to show it. I want to ask him if he made such a statement that is different.

By Mr. Caldwell:

Q. Quoting out of what is before me, did you say: "I desire to cite an incident which I had with Commissioner Caldwell, which in my opinion also disqualifies him. I operated a broadcasting station at Newark, New Jersey, in the
184 name of Radio Industries Broadcasting Co., call letters WDWM, on a wave length of 280.2 meters, 1,079 kilocycles." That is on page 21. I want to include in the same question a question on page 25: "I therefore had to sell my interest in this station to the local Chamber of Commerce, although I had originally established the station in connection with my business of radio and automotive distribution. In connection with the sale I lost several thousand dollars on the sale." Did you make such a statement before the Senate Committee on Interstate Commerce? A. I sure did, and I can explain the statement very thoroughly before the Commission.

Q. I will let your counsel ask you to explain if he wants to.

Mr. Munter: We want him to explain.

Mr. Caldwell: Ask him now, I have no objection.

The Witness:

A. Where I say I was—what was the first quote—may I ask—that I managed it, I say?

By Mr. Caldwell:

Q. You said pretty near everything about the control of that station. A. Well, I say I ran that station. I didn't say on here—where is it, may I ask?
185 Q. Here (indicating). A. I say here I operated a broadcasting station in Newark, New Jersey. I, personally, didn't say that I owned that station completely,

myself. I operated it. I was a stockholder, and I said as manager for that station. Now when I appeared before the Senate Committee I might have used the word "operated." I didn't say I owned it.

Q. You say you sold it. A. I said I sold my interest in the company.

Q. You say you sold it. A. My stock.

Q. You were not selling something somebody else owned? A. No, sir; my stock in it. I didn't hold the whole stock. I again repeat before the Commission that I never owned control of this station, personally, myself.

Q. Did not you refer to it throughout the testimony as your station? A. Personally, did I?

Q. Did not you refer to it throughout the testimony as your station? A. As my own personal station?

Q. Did not you refer to it as your station? A. No; I might have—the same as my attorney says, "my client." He doesn't own me when he says, "my client."

Q. You were representing the station when you were appearing there? A. Yes, sir.

Mr. Caldwell: That is all I have to ask this witness.

186 Redirect examination.

By Mr. Munter:

Q. Commission counsel asked you about the Hogencamp affidavit; you advised Mr. Hogencamp what was stated in the affidavit. Now state whether or not you received a memorandum from me as to what points we are to cover in the affidavit and you telephoned the contents of that memorandum to your client. A. I telephoned him the charges that were given out here before the Commission, and told him I wanted to have him cover everyone of the points in detail.

Q. Did you do so at my request and advice? A. Yes; you told me to get the affidavits.

Mr. Munter: That is all.

By Mr. L. G. Caldwell:

Q. You did not bring up the file containing these programs. A. Personally, myself?

Q. Yes. A. I didn't have anything to do with the program. In fact, I was pretty busy at the hearing. I wasn't in Newark.

Mr. Caldwell: That is all.

Chairman Robinson: Under our rules that record may be taken. You may cross-examine him.

Mr. Caldwell: I think that will be all, except for the testimony that we are about to put on ourselves, unless the Commission wants anything further?

187 Chairman Robinson: The Commission will be advised by counsel.

Mr. Caldwell: I feel at present there will be no necessity of it. Have you anything further, Mr. Munter?

Mr. Munter: Not a thing.

Chairman Robinson: Then you may put on your witnesses.

Mr. Caldwell: I will call Mr. Batcheller.

Whereupon **Arthur Batcheller** was called as a witness for and on behalf of the United States, and having been first duly sworn, was examined and testified as follows:

Direct examination.

By Mr. Caldwell:

Q. What is your name? A. Arthur Batcheller.

Q. Where do you live? A. Brooklyn, New York.

Q. What is your business? A. Radio Supervisor, Department of Commerce.

Q. For what district? A. Second District.

Q. How long have you been Radio Supervisor for that district? A. I was appointed August 20th, 1920.

Q. And you have served continuously? A. Continuously.

Q. Is Mr. Manning an assistant of yours? A. He is an assistant of mine, yes, sir.

Q. What title does he hold? A. Radio Inspector.

188 Q. Will you state what technical education you have had, briefly? A. I had electrical engineering

schooling, three years, Y. M. C. A. Polytechnic three years, and experience in signal and railroad——

Mr. Munter: We admit his qualifications to save time.

By Mr. Caldwell:

Q. In your work as Supervisor of the district, do you have occasion to check up on broadcasting stations? A. Yes, sir.

Q. What ground do you attempt to cover in your checking? A. Right at the present time we are primarily concerned with carrier stability, and a determination of whether or not the stations operate within the 500 cycle limits, the limits set by the Radio Commission.

Q. Referring to the date of May 17, 1928, and the period in which that date occurs, what practice were you following in checking up broadcasting stations? A. Our practice, in the main, had been to check stations by means of the zero beat. This checking was for the purpose of determining the two factors I mentioned; that is the carrier stability and to determine whether they were in the 500 cycle.

Q. Did you make such a check on every station in your district? A. That is my duty, and I have devoted most of my time to the checking with my assistants.

189 Q. Is station WTRL in your district? A. Yes, sir.

Q. How many nights a week do you check on any particular station? A. We check Monday, Wednesday and Friday of one week, and Tuesday, Thursday and Saturday of the other.

Q. Was it your practice, so far as you had knowledge, to check up on a station when you knew it to be in operation? A. Yes; of course, we could not check a station by means of the zero beat unless its carrier was on the air, so that we could identify it.

Q. How did you attempt to find out whether a station was or was not in operation? A. Why, we maintain an observation station. We call it in our service a wandering station. I assign one, and sometimes two or three men to that duty. We use the newspapers, and other periodicals for locating the programs, and the hours they go on, and the character of the program so that we can identify it; as well as the call letters of the station.

Q. What, if any, tests have you made of Station WTRL while in operation? A. I do not recall of ever making a zero beat measurement of that station. I have never heard it on the air, either at my wandering station, or at my home, where I have a selective receiving apparatus.

Q. And when you make that statement, what period of time are you covering? A. Our listening period, our
190 wandering periods at the office sometimes begin at eleven o'clock in the morning; sometimes they begin at three o'clock in the afternoon and extend usually until midnight.

Q. Do you attempt to vary your periods of checking during the week, so that throughout the week you cover the whole 24-hour period of the day? A. No; we don't do that, but, as I stated previously, we check Monday, Wednesday and Friday of one week, and Tuesday, Thursday and Saturday of the other, because there are stations that are operating on a time division basis, and they might not be on the air in addition to their time basis on the night of the check.

Q. But as a result of your system, in a period of two or three weeks—— A. We cover all our stations, yes.

Q. What, if anything, did you get in the way of information from the papers as to when WTRL was on the air? A. I don't recall getting any.

Q. Do you have charge of the visits of inspectors to particular stations? A. I do.

Q. Inspector Manning is under your direction in that respect? A. Yes, sir. I might say, no particular stations. All stations in my district.

Q. You try to cover them all? A. I do; that is, not by distinct stations now; I have not got enough men for that, and I am concentrating on this frequecy stability.

191 Q. Who are the men you assigned to a check of this station, WTRL? A. Mr. Manning, and Mr. Bogardus; both Mr. Manning and Mr. Bogardus.

Q. Did they make any report to you of having made a visit to that station? A. They made rather a lengthy verbal report to me. I talked with both men after their return to the office; and a day or so after that he made a memorandum to me, which I have not got here, but the substance of it is in this——

Mr. Munter: I object, if the Commission please, to a statement of what is in this letter, by this witness. Not by any stretch of the imagination or the rules of evidence can you introduce that.

Mr. Caldwell: To save time, I am not going to ask him what was in the letter.

Mr. Munter: I understand that. You are trying to get him to state what was in the letter.

Mr. Caldwell: No, sir. I am going to have the agent on the stand.

Mr. Munter: That is what I understood you were trying to lead up to.

Mr. Caldwell: No, sir.

By Mr. Caldwell:

Q. It was shortly after May 17th they made that report to you? I will hand you a document which I will ask to be marked, "Commission's Exhibit 1"——

192 (The paper referred to was thereupon marked, "Commission's Exhibit 1".)

By Mr. Caldwell:

Q. And ask you if that is a report which you made to the Commission on the date it bears? (Handing paper to the witness.)

Mr. Munter: Now, before he answers I want to ask a question to clear this up. May I have the permission?

Chairman Robinson: Yes.

By Mr. Munter:

Q. Mr. Batcheller, you did not, yourself, visit this station? A. No, sir.

Q. You don't know, yourself, personally, anything with reference as to the truth or falsity of this statement? A. I listened to the report of my officer. I did not inspect it.

Q. And you know nothing about the matters that Mr. Bogardus and Mr. Manning reported to you? A. Other than I have in my wandering station listened——

Q. Do you think it is unusual for you not to be able to hear a station of 15 watts, located at Midland Park, New

Jersey, 35 miles away from Brooklyn with so many high powered stations on the air, and the steel structures, and this station was on the air irregularly, three alternating days? Do you think that is unusual? A. I would not say that is unusual.

Mr. Munter: That is all.

193 Chairman Robinson: What did you say about three days?

Mr. Munter: Three alternating days.

By Mr. L. G. Caldwell:

Q. In the test you make, you mentioned two sources, one at your home, and one at headquarters. A. Well, the measurements which we make for the Government, which we report here regularly, covering the carrier stability; that is, the extent to which a carrier wave may wander, and the measurement which we make of the operating frequency to compare it with the frequency that the Commission has assigned,—now those measurements are made in our headquarters. I have the apparatus in my home for doing that, but I do not do it, because it would interfere with the neighbors' reception, of course.

Q. These tests you make at your home are on your receiving sets? A. I listen to that to monitor, to listen how the stations are coming in.

Q. Is there any reason why your apparatus in your headquarters will not detect the station, if it was on the air anywhere near its assigned frequency? A. Why, we might have a little difficulty in getting a good substantial signal in there, but the carrier mission will carry—we do not concern ourselves with getting any modulated signals. Of course, we need that. But we explore if there are carrier beats, and if there are we try to locate them. And I should expect to receive a carrier beat if this station was in the air.

Q. You have receiving apparatus which, in your
194 judgment, would give you that information if it was
on the air? A. We have the standard; our standard is furnished by the United States Bureau of Standards, and we have apparatus suitable for this work.

Q. And if the station had been on the air, in your judgment as an expert, you would have—— A. I would say if the station had been on the air at some time during the year we had been checking that I mentioned up to midnight, that we would have heard this station.

Q. And this "Exhibit 1" is the report which you made to the Department of Commerce as a result of the report—— A. That is a letter which I wrote to the Department of Commerce, Radio Division.

Mr. Caldwell: That is all, You may cross-examine.

Cross-examination.

By Mr. Munter:

Q. I just have one question, Mr. Batcheller. Do you keep records? A. Of our checks?

Q. Yes. A. Yes; we have a regular engineering bookkeeping system there.

Q. Do those records show what you have testified to here today, that you have not been able to hear from this station? A. The records would show, by the absence
195 of any measurements made of this station.

Q. And if there were three stations on the same wave length, would you be able to tell by the carrier system which of the three were on? A. If the three stations were all operating at the same time, I would not attempt to make a measurement and submit it to the Division or the Commission. An instrument can only measure accurately one station at a time; and we are employing, as I think I stated here, the zero beat.

Q. Do you mean to tell the Commission here that you have personally made an effort to hear this station on the air? A. I have not made any more effort to hear this particular station than I have any other. But I am charged with the enforcement of the communication laws of the Second District, and it is my duty to check broadcasting stations. These stations——

Q. I meant to say, you have not made any special effort, Mr. Batcheller, to get this station? A. No more effort on that station than any other; it is one of my stations.

Q. And you have accurate records showing what efforts you have made? A. We have records showing all of the engineering measurements made on the stations listed, the frequency for all of them.

Mr. Munter: If the Commission please, I now move that all of this testimony be struck from the record, on the ground that the best evidence is the record this office
196 keeps.

Chairman Robinson: The trouble is, he says it shows an absence of these measurements.

Mr. Munter: It is up to the Commission to say what it shows, not for him. It is the best evidence. And learned counsel knew what they were going to be confronted with here today, and they could have brought the record when they brought Mr. Manning and Mr. Batcheller here from New York.

The Witness:

A. I came here for another purpose.

By Mr. Caldwell:

Q. Mr. Batcheller, have you examined the record? A. I have, sir; I examine them each morning after they are made.

Q. Now, if they do not contain these notations, is there any notation in the record——

Chairman Robinson: Mr. Caldwell, we have no controversy about the records. This witness is competent to say that there is a record and that that record does not note this station. What he has stated as to the system of inspection is proper, surely. Now if he said there was a paper containing a record of the station, it might be proper.

Mr. Caldwell: Even then, if he made the test himself, it would be proper.

Chairman Robinson: Besides, this record is the result of his own listening in. I do not see the application of the rule as to secondary evidence.

Mr. Munter: I will state my contention with reference
197 ence to this witness on this question.

By Mr. Munter:

Q. Will you state under oath that you could hear in New York with other high-powered stations on the air a 15-watt station located 35 miles away from New York, under ordinary New York conditions, and ordinary facilities, as you have them? A. There are times, of course, when I could not do that.

Mr. Munter: That is all.

By Mr. Caldwell:

Q. Would that be true of the greater portion of the time, or not? A. If we had a local high-powered station near by and the frequency went up, we would have difficulty doing that.

Q. When you make your tests—— A. We do it in the office, generally.

Q. If you had a high-powered test that would endanger the observation, do you make it? A. There are times in the past that we might get interference and prevent detecting carrier wave—the power of a signal is low——

Q. Do you recall any reason why you should have any such difficulty in getting station WTRL, having a record of the stations in New York and their frequency? A. I should suspect we would have more trouble with that station than a station on a lower frequency—a higher wave length and lower frequency.

198 Q. Would you have any greater difficulty on this station than any other station of high frequency in New York? A. Yes; on account of the small power.

Q. And by reason of any other outside influence, such as high-powered stations, do you have any? A. We have not any very high-powered stations on the high frequency bands. But there are times when a station will get off frequency and prevent our getting measurements. And a night may pass that we do not get several stations that are necessary in getting them, but we follow them the next night and continue to follow it.

Mr. Caldwell: That is all.

Chairman Robinson: Call your next witness.

Mr. Caldwell: I will call Mr. Manning.

Whereupon **Charles T. Manning** was called as a witness for and on behalf of the United States, having been first duly sworn, was examined and testified as follows:

Direct examination.

By Mr. Caldwell:

Q. Your full name? A. Charles T. Manning.

Q. Where do you live? A. Madison, New Jersey.

Q. What is your business? A. Radio Inspector for the Department of Commerce.

199 Q. Where located? A. Subtreasury Building, New York City.

Q. You are the same Mr. Manning Mr. Batcheller has referred to in his testimony? A. I am.

Q. Did you, on or about May 17, visit the headquarters of Station WTRL? A. I did.

Q. Was that pursuant to instructions given you by the Supervisor? A. It was.

Q. Will you state to the Commission what you found on your visit?

Mr. Munter: May I ask him whether he reduced his report to writing?

The Witness: I gave Mr. Batcheller, first, as he said, a verbal report and then gave him a memorandum.

By Mr. Munter:

Q. Are you now testifying from your personal recollection, or the report that you prepared at that time?

Mr. Caldwell: He hasn't the report before him, so I think he is testifying from recollection.

Mr. Munter: If you will let me finish one question without interruption, we will get along much faster.

Mr. Caldwell: All right. Answer the question.

The Witness: What is the question?

By Mr. Munter:

Q. The question is, are you testifying from your
200 personal recollection, or from the report? A. I testify from my recollection, after visiting the station.

Q. Irrespective of anything you reduced to writing? A. My report—I did the same on my investigation.

Mr. Munter: All right, sir.

By Mr. L. G. Caldwell:

Q. Please state what you found on your visit? A. We arrived, in the first place, in the afternoon, 2:30, not one o'clock, as specified, and the junior Mr. Hogencamp was not there. And after a considerable ring a senior Mr. Hogencamp opened the door to Mr. Bogardus and myself, and we told him who we were, and we were there for the purpose of inspection of Station WTRL. He said the station was not operating, and told us he was not doing——

Mr. Munter: I did not catch the first part. Who told you this?

A. The senior Mr. Hogencamp. The junior was not there.

Mr. Munter: I object to anything said by the senior Mr. Hogencamp, not being a party. You do not mean the same one that made the affidavit here?

The Witness:

A. I don't know who made the affidavit.

Chairman Robinson: Who is the senior man; one of the owners of the station?

Mr. Munter: What is the fact about that?

Mr. May: No interest whatsoever.

Chairman Robinson: Has he any interest in it?

Mr. May: No interest whatsoever.

Chairman Robinson: You may refrain from giving
201 us his statement.

Mr. Caldwell: Let me ask this question, Mr. Chairman: The A. C. Hogencamp who signed this application, is that the father or the son?

Mr. May: The junior; everything is junior. The senior has nothing to do with it whatsoever.

Mr. Caldwell: Who is the senior?

Mr. May: I don't believe they have the same initials.

Chairman Robinson: Mr. Manning said he did not find the station operating. What else did you find?

The Witness:

A. We then asked where he had his studio.

Mr. Munter: I object to what he asked anybody.

Chairman Robinson: I want to see how far he goes. A little incidental inquiry would be proper, I think. What did you ask the old man?

The Witness:

A. We asked the senior Mr. Hogencamp where the studio was, and he said in the parlor, but he made no effort to show it voluntarily.

By Chairman Robinson:

Q. Did you go into the parlor? A. We told him we would like to see where he had the studio, and he took us in and showed us what was inside, and he had a microphone—

Q. You may describe that in detail. A. This studio was the regular parlor of any house, he said it was at that point where they broadcasted any programs.

202 Q. Did you see a microphone in there? A. I beg your pardon?

Q. Did you see a microphone in there? A. Yes; over in the corner; and a table.

Q. A piano? A. As I recall, it was a table, a long box. I didn't go over there. I stood in the doorway and saw it from that point. He said the thing was not hooked up ready to the studio.

Q. Not what he said. Did you find it hooked up? A. No; he told me it wasn't hooked up.

Q. What he said is not evidence here. A. I didn't go beyond the door of the parlor.

Chairman Robinson: If he was one of the owners, his statement could be admitted as against interest.

The Witness:

A. After leaving the studio we then went out in the back yard, and this house is the rear of the main house, and the man told us to wait a minute, the senior Hogencamp told us to wait a minute or two, because he had a lot of dogs in there and wanted to get them away so they would not run out, and so we could get in. So Mr. Bogardus and I stood out and waited. And, incidentally, there was two collies in the parlor, opposite the door. And Bogardus and I stood there until he told us to go in. And then when we went in there was this room where there were seven or nine—I am not certain how many, puppies he had that were running around this room.

By Chairman Robinson:

203 Q. Right around the transmitter? A. No; not around the transmitter at that time, because there was a wire, and the transmitter was inside of that wire.

Q. Were they close to the generator? A. No; the dogs were not, no, sir; but this panel was lying there to the right of the door when we went in; and all the time we were there, why, the dogs were running around there, and we were asking questions about the station having been on the air, and when last on the air.

Mr. Munter: Of course, I object to anything that was said by anybody except one authorized to speak for this corporation.

By Mr. Caldwell:

Q. Was this gentleman apparently in charge of the place? A. Well, he had to do with the raising of the dogs.

By Chairman Robinson:

Q. What transmitting setup did you find there? A. I saw a panel, a hard rubber panel, some coils, and three holes in the panel where there had been meters; some meters and pictures I had seen at a previous time they had meters in this panel, but they were not in the panel at the time I was there.

Q. Was there any equipment in working order at that time? A. No, sir; it was not.

Q. How long would it have taken to put it in working order? A. Well, it would have taken probably several hours, because, in the first place, it was covered 204 with dirt, and with dirt and the meters removed, it would take time to get everything connected up and the contacts cleaned up and the set generally placed in operation.

Q. From what you observed, from the physical view there, how long would you say it had not been in operation? A. Well, that is kind of hard also, Mr. Chairman, for this reason: On account of the dust. I don't know how much dirt is flying around there, and how long it would take to accumulate at that particular point.

Q. To operate a transmitter, I take it is necessary to use fingers at certain places. Were there any finger prints in the dust? A. No, sir; there were not.

Q. Showing recent operation? A. No, sir; not that I saw.

Q. What sized room was this? A. I should say that room was approximately 12 by 15 feet.

Q. Did you look at the power equipment? A. I looked at it through the screen and around the side as far as I could go.

Q. What kind of equipment was it? A. Motor and generators. The main part of it I saw was this panel with all of the high-frequency circuit attached; the coils and the sockets for tubes, but the panel was——

205 Q. Was the power in the same room as the transmitting apparatus? A. Yes, sir.

Q. Did you examine the outside? What sort of an antenna there was? A. They had a single wire antenna running from the corner of this wooden house, or whatever it might have been, a barn, running over diagonally from that corner. There was a wire came down the front of this building to the window where they could connect from the insulator into the room.

Q. Let me get it. Was the antenna on towers, or how? A. On a pole. There was a pole on the corner of this barn, and then from that corner of the barn.

Q. You say a barn. A. Well, it may have been a barn at one time.

Q. What was the building used for? Anything else but this? A. They were charging storage batteries when I was there. On the opposite side of the door from which we entered there was a long shelf on which they had a good many storage batteries on charge. And not only that, but the floor was well covered with dog manure, from the effects of these dogs running all over there.

Q. I have only one more question: Which was the livest, that transmitting station, or those puppies? A. Why, those puppies were.

Chairman Robinson: I beg your pardon, Mr. Caldwell.
Mr. Caldwell: That is perfectly all right. Glad to have you interrupt.

206 By Mr. Caldwell:

Q. State, if you know, where the younger Hogencamp was. A. The senior Hogencamp told me he was working in store in Paterson, New Jersey.

Mr. Munter: I will ask the witness—you report that the younger Hogencamp owns the station. Where did you get that?

By Mr. Caldwell:

Q. Where did you get that?

Mr. Munter: You reported according to your testimony the younger Hogencamp was employed in a store. Where did you get that? A. The senior told me that.
Mr. Munter: You only put in what he said? A. Yes; I couldn't put in only what he said.

Chairman Robinson: We will put that in with the application for the license.
Mr. Hunter: I believe the record shows the corporation owns this station.
Chairman Robinson: Yes; but there is a signature or an affidavit by a Hogencamp.
Mr. Munter: He is the operator, but not the owner.
Mr. Caldwell: I want to ask one more question.

By Mr. Caldwell:

Q. Do you participate in the making of tests of the broadcasting stations in the line of work that Mr. Batcheller has covered in his testimony? A. I do.
207 Q. Do you go on the same schedule as he testified to? A. I do.
Q. Have you, in your tests, ever detected Station WTRL on the air? A. No, sir; I have not, not either at the office, or at my home.
Q. Do you use the same apparatus that he has described? A. Yes; the same idea; not the same manufacture. You mean at my home?

Q. Yes. A. Yes; along the same line. Not the same manufacture.

Q. At the office you have used the same, have you? A. Yes; I have.

Q. Did you make any investigation as to whether any broadcasting listeners in the vicinity did hear it? A. Yes; I did.

Mr. Caldwell: I will offer this, subject to the ruling of the Commission, as to what they said.

Mr. Munter: I object to that.

Chairman Robinson: We have been very liberal with station owners to show what listeners say about the station.

Mr. Caldwell: I offer to show, if the Commission please, simply that he called on a large number of persons, and that they did not hear the station.

Mr. Munter: If you are going to offer that, why cannot we introduce the letters from the people that did hear the station?

208 Mr. Caldwell: I am offering that with the expectation of getting a ruling.

Chairman Robinson: You might show that he got a large number of letters, but the letters themselves would not be evidence, but that interest was shown and was of some probative force.

Mr. Caldwell: But I would say all I want is to make the offer, and I would expect the same ruling, subject to a ruling by a reviewing court. I offer to show that a large number of listeners did not hear the report of the station.

Chairman Robinson: I should say, before we rule it out, here is a Government official; it is a duty of his to know whether there is transmission. One way of ascertaining that is to know whether a station has temporarily closed, or neglectfully closed. May he not go around and see the listening public in regard to whether or not it is operating? This official is required by law to report whether there is transmission. (After a conference with other members of the Commission.) The Commission is of opinion, following its counsel, that it will be tendered and overruled.

Mr. Caldwell: An exception.

You may cross examine.

Cross-examination.

By Mr. Munter:

Q. Mr. Manning, you did not release to the press this report of yours? A. I did not.

209 Q. And you do not know who owns this station, personally? A. No; I do not know.

Q. So when you state in your report here that the younger Hogencamp, who owns the station—you are in error? A. Well, that station in my records, was listed in the name of Hogencamp. I don't know whether he owns it, or some other person owned it.

Q. Now you stated to the Honorable Chairman, and in answer to questions by him, that you did not go inside of the broadcasting room? A. I only went to the door.

Q. So you could not say whether the transmitter was hooked up, or not. A. I could not see whether it was connected.

Q. May it not have been possible, when you called at one o'clock on that date, that the meters may have been taken out for experimental purposes, as stated in the affidavit of Mr. Hogencamp; that would be possible? A. Then that transmitter in the barn that I saw would have shown evidence of having been handled or something done to it.

Q. How far were you from the instruments at any time? A. The main transmitter in the barn, or outer house, I was about four feet.

Q. Now you do not mean to tell this intelligent Commission you could tell from that distance how much dust was on the instruments then? A. I certainly do, I state

210 that from the amount of dust on the rest of the things were not used in the room.

Q. You do not know how long it was? A. That I could not say, how long it was.

Q. If as in the affidavit they were on the air Sunday, May 13th, and Friday, May 18th, and so on, you do not deny they were on the air there then? A. I can't deny that statement, no.

Q. You do not deny they were on the air on Monday, February 20th, and Wednesday, February 22nd, and Friday, February 23rd, and May 13th, 1928, and you made your report on the 17th of May? A. Yes, sir.

Q. You don't deny they were on the air then? A. I can't say they were, because I have not heard them.

Q. You don't deny that on Tuesday, May 15th, they had a program there from seven to seven-thirty, and base ball talks, and from seven-thirty to eight-thirty string music? A. Well, I didn't hear it.

Q. Will you please answer my question? A. I didn't hear that station.

Q. I asked you whether you could deny they were on the air; I didn't ask you whether you heard them, or not. I didn't ask you who owned the station, either. A. I can't say they were not on the air.

Q. No, of course not. It may have been perfectly possible that there may have been experiments
211 conducted on the day you called there? A. Then there would be some evidence around the station.

Q. Let me ask you, did you make any effort to get in touch with Mr. Hogencamp, Jr., as to this before you made this report? A. I didn't, personally, no.

Mr. Munter: That is all.

By Mr. Caldwell:

Q. You could not say that the station was on the air on those days? A. If it is not in my reports for those days we were checking the air, I cannot say other than that.

Mr. Caldwell: I have nothing further.

By Chairman Robinson:

Q. Mr. Manning, what evidence was there—How long, from appearances, had those dogs been running around there? A. They had had access—that was their regular kennel. Those puppies then were between three and four months old.

Q. Were they right around the transmitting screen? A. Close up to the screen, it was close to the transmitter itself; I don't know whether they allowed them other times to go other places.

Q. Let us see, the transmitter screen was beyond, in another section of that room? A. Yes; just inside of the door.

Q. Did you go through the kennel to get to the
212 transmitting apparatus? A. There was no door right there by where I was inside of the door.

Q. Was the place littered up by the dogs? A. Yes, sir.

Q. Had it been cleaned out recently? A. Not from appearances.

Q. There was a lot of smell? A. Yes; generally all over, and not only that, but these batteries being on charge too, the air in there had several different odors. These batteries, the fumes of the batteries being on charge, as well as the dogs being in there.

Q. There was a combination of battery charging radio, and pups? A. Yes, sir.

By Mr. Caldwell:

Q. Were the batteries such as would be or could be used in connection with a transmitter? A. Well, they were six-volt batteries that were used in any kind of a six-volt tube to light the filaments.

By Chairman Robinson:

Q. What was this equipment; a battery power, or they have a power line in there? A. They were using a power line in there. But I would like to say that these batteries—I asked the senior Hogencamp if those batteries were always in there being on charge——

Mr. Munter: I object to what the senior Hogen-
213 camp said, in order to preserve the record.

Chairman Robinson: You could not say what he said. Go ahead, Mr. Caldwell.

Mr. Caldwell: What was the ruling of the Chairman on that?

Chairman Robinson: Oh, it is not right for him to say what the old man said.

By Mr. Caldwell:

Q. Well, in your judgment, were the batteries such as were a part of the equipment?

Mr. Munter: I object to that. Here is an engine for broadcasting. He doesn't have anything to do with it, but if you want to show it, there were six batteries, four of which were used in this outfit, and two automobile batteries. He will tell you there were.

Mr. Caldwell: I would rather ask my first question.

By Mr. Caldwell:

Q. In your judgment were these batteries such as were a part of the broadcasting apparatus, or transmitter? A. Not entirely.

Mr. Caldwell: I have no further questions from this witness.

By Mr. Munter:

Q. Four of those batteries, so far as you know, pertained to the broadcasting station and equipment? A. I don't know how much belonged to the equipment.

Q. You know some did? A. I have my doubts.

Q. You would not deny they did? A. I would not.

214 Q. No. This equipment was screened off, so that the dogs had no access to it? A. Yes; they must have had access, because the conditions existed inside of the screen on the floor, the same as outside. How they got there, I don't know.

Mr. Munter: That is all.

Mr. Caldwell: Mr. Chairman, I want to offer a portion of the application of this station under date of April 20th, 1927, reading as follows——

Mr. Munter: I will admit the whole thing. Let us save time. There is another station here to be heard.

Mr. Caldwell: This is an earlier application. I desire to read a certain portion.

Mr. Munter: May I see it then? If we are going to get back history, I want to see what is going in.

215 Mr. L. G. Caldwell: I call attention to the statement of the Technical Radio Laboratory wherein, in answer to the question on citizenship, it states "Born in Patterson, New Jersey." After the words "Technical Radio Laboratory" there appears in parentheses the name "H. C. Hogancamp," which is crossed out in pencil. The application is signed by H. C. Hogancamp and the date is April 27, 1927.

Mr. Munter: Do you mean to show by that that the Technical Radio Laboratories were born in New Jersey on that date?

Mr. L. G. Caldwell: I want to show that there was a mistake on the part of the witness when he said that John Hogancamp owned this station.

If the Commission please, I see no need of offering Commission's Exhibit 1 in evidence, as it is the same letter that appears already in an exhibit that the station has previously offered in evidence in connection with the so-called press release of June 13.

Mr. Munter: You do not recall, however, that the Commission made its ruling, first, that the exhibit was received in evidence, and later excluded it; so that legally speaking, it is out.

Chairman Robinson: Let us all concur that that is a copy of the letter, and if insisted upon let us have the original letter.

Mr. Munter: I understood that Mr. Caldwell withdrew it from the record because he thought our copy was in; but, as a matter of fact, our copy is not in. You ruled it out.

216 Mr. L. G. Caldwell: I offer the Commission's Exhibit 1, which is a document identified the other day.

Mr. Munter: No objection.

(The document referred to was received in evidence as Commission Exhibit No. 1—WTRL.)

Chairman Robinson: Do you reserve opportunity for further evidence?

Mr. Munter: Whatever the Commission pleases on the subject.

Chairman Robinson: Will there be more evidence on the part of the public?

Mr. L. G. Caldwell: No, sir.

Mr. Munter: I think if the Commission has occasion to sojourn in that part of the country it ought to take a look at the station and these dogs which have been referred to.

(Thereupon the hearing as to Station WTRL was closed with the exception of engineering testimony to be introduced by the Commission on July 23, 1928.)

216½–401 [Endorsed:] Court of Appeals, District of Columbia. Filed Oct 9, 1928. Henry W. Hodges, clerk.

402–414 APPLICANT'S EXHIBIT #1.

For Release Wednesday, June 13, 1928.

82.

Federal Radio Commission, Washington, D. C.

Applicant's Exhibit #1.

Giving as one of its reasons for placing Station WTRL, operated by the Technical Radio Laboratory, Midland Park, N. J., on the list of 162 which must show cause July 9 why its operation is for the public interest, convenience and necessity, the Federal Radio Commission today made public the following report from Arthur Batcheller, U. S. Radio Supervisor:

"Department of Commerce,
Radio Division, Washington, D. C.

"SIRS:

"Pursuant to instructions contained in Division letter, addressed to All Supervisors of Radio, dated May 10, 1928, file 5306 405 79, I submit herewith report of inspection made of an inactive broadcasting station, assigned call letters WTRL, listed under the name of the Technical Radio Laboratory, owned by Mr. H. C. Hogencamp, located at 28 Sicomac Ave., Midland Park, N. J.

"Inspectors Bogardus and Manning, attached to this office, inspected the premises where this station is located, on May 17, 1928. The apparatus was found to be partly dismantled and in inoperative condition; covered with dust and dirt, and three meters were missing from the panel board. There is no evidence to show that it has been used for a long period of time. Information obtained from a number of broadcast listeners residing in the vicinity of the station indicates that the transmitter has never been operated as a broadcasting station. As a matter of further information to the Radio Division and the Federal Radio Commission, this office has never heard this station on the air.

"At the present time, the room which houses the radio equipment, is being used by Mr. Hogencamp, Sr., as a room for charging storage batteries, and also for raising dogs.

"The younger Mr. Hogencamp, who owns the station, is employed in a radio store in Paterson, N. J."

On behalf of this station D. W. May appeared before the Senate Interstate Commerce Committee last February and filed charges of unfairness and injustice against the Commission because it refused to grant it more power and a better wave. His attacks were directed specifically against Commissioner Caldwell, in charge of the First Zone, which includes New Jersey, because Mr. Caldwell took the position that the record of this station did not entitle it to special consideration.

* * * * * * *

415 Applicant's Ex. #4.

Copy.

Applicant's Exhibit #4.

Technical Radio Laboratory.

Call Letters: W-T-R-L.

Station: Midland Park, New Jersey. General Offices: 380 Central Avenue, Newark, New Jersey.

Affidavit.

State of New Jersey,
County of Essex, ss:

Harold C. Hogencamp, of full age, being duly sworn according to law on his oath deposes and says that:

1. I am President and Operator of Technical Radio Laboratory, of Midland Park, holder of radio station broadcasting license call letters W-T-R-L.

2. I hold a Radio Operator's License, Commercial Second Class, issued by the Department of Commerce, Radio Division #423 valid for the operation of a broadcasting station dated July 26, 1927.

3. I have been operating said station since the issuance of license to it dated December 18, 1926, #3025, down to the present time.

4. This station has been "on the air" during that period on an average of three times a week, down to the present time, with various kinds of programs including sport talks, musical programs, patriotic programs, religious programs and technical programs and have catered to things of interest to people in and about Midland Park, New Jersey, which is the service range of the station by reason of the low wattage of this station.

5. The station has received hundreds of letters from local "listeners-in," exhibiting great interest in this station which is the only station in this part of Bergen County, one of the largest counties territorially in the State of New Jersey, particularly commending us for catering to local interest.

416 6. We estimate the cost of this station, its equipment, operating expense, experimental work, organization fees and expenses, legal fees, &c., to be about $10,000.00, and the broadcasting license is an absolutely essential and necessary right, without which this station and the moneys which we have put in it is an absolute loss.

7. We have operated this small station in the past and at the present time in the public interest and convenience of those within the range of where it serves and of course the Commission should realize that by reason of restricting this station to 15 wat-s it has greatly impaired its ability to function on a better basis so as to serve the public in a much better way. If the Commission will increase the wattage to the point of usefullness to the station, we will greatly increase the number and character of our programs and create a situation where the station will be not only in local demand but in demand throughout the northern part of this state.

8. Mr. May, General Manager of the Station, and I have been working on plans for some time to greatly facilitate the use of this station and the service that it will give the

public, as soon as the Commission would give us more power and a better wave length but of course we have not been able to put our plans into action because we have been waiting for word from the United States Supervisor of Radio and the Commission for increase of power and change of wave length since February 2, 1927, and since the Commission assumed its duties under the Radio Act of 1927.

9. We protest against the denial or revocation of the present license and we contend that we have served the public interest in a greater proportion than the powerful stations created by the Commission, in comparison with our very small wattage of 15 and the wattage of 50,000 granted to some of these powerful stations, and we protest further on the ground that by denying or revoking our license you will be taking our property without due process of law and without just compensation and we further protest on the ground that we are entitled to the same treatment and the same opportunities that the Commission is according to the stations of the National Broadcasting
417 Company and affiliated groups, and if we are accorded like treatment or even reasonable treatment, we will be in a position to give programs of the same style and character as these large groups.

HAROLD C. HOGENCAMP,
For Technical Radio Laboratory.

Sworn and subscribed to before me this 10th day of July, 1928.

[SEAL.]

DOROTHY A. REISIG,
Notary Public of New Jersey.

My commission expires Nov. 3, 1932.

418 APPLICANT'S EXHIBIT NO. 5.

Technical Radio Laboratory.

Call Letters: W-T-R-L.

Station: Midland Park, New Jersey. General Offices: 380 Central Avenue, Newark, New Jersey.

Affidavit.

DISTRICT OF COLUMBIA,
City of Washington, ss:

D. Winthrop May, of full age, being duly sworn according to law on his oath deposes and says that:

1. I am Secretary and General Manager of Technical Radio Laboratory, of Midland Park, and Newark, New Jersey, holder of radio station broadcasting license, call letters W-T-R-L.

2. First, I respectfully protest against the Commission issuing General Order No. 32 against this station, prejudging our application, denying us a hearing on application heretofore made embraced in letters which passed between the Station and your Commission, dated between Feb. 2nd, 1927, and April 3d, 1928, copies of which are attached hereto and made a part hereof, and from concluding without any legal proof or any other proof before it, without notice to us or otherwise, in your circular letter of May 25th, 1928, that "from an examination of your application for future license, it does not find that public interest, convenience or necessity would be served by granting it," and then fixing July 9th, 1928, as date of hearing and advising us that "at this hearing unless you can make an affirmative showing that public interest, convenience or necessity will be served by the granting of your application, it will be finally denied."

3. I respectfully ask the Commission to first accord to us the hearing to which we are entitled to on the previous application above mentioned.

4. I respectfully submit to the Commission that Commissioner Orestes H. Caldwell do not participate or
419 hear our application heretofore made or sit in this
matter on the ground that he is biased, prejudiced and hostile to this station, and deponent, that he has heretofore acted arbitrarily and without justification against this station without affording us a hearing and completely ignoring and denying our rights, as the records of this Commission will show and the correspondence above mentioned, also written communication of Commissioner Caldwell to Senator Royal S. Copeland, dated January 11, 1928, and our answer thereto also addressed to Senator Copeland, dated January 24, 1928, copies of which letters are annexed hereto and made a part hereof, as a result of which he is legally and otherwise disqualified from sitting as a judge or commissioner in our cause.

5. I also desire to offer in evidence for the consideration

of the Commission, the correspondence above referred to, as part of our case and record.

6. I also offer in evidence copy of Station Broadcasting license originally issued to this station on December 18th, 1926, No. 3025, by Secretary of Commerce Herbert Hoover, pursuant to act of Congress of August 13, 1912, entitled "An Act to Regulate Radio Communication.

7. I assert that by virtue thereof we acquired priority rights and property rights in said license and/or the right to broadcast, which rights became vested, and which the Commission has no right to divest us of, and that we are entitled to the same equality and the same rights as any other broadcasting station.

8. I offer in evidence and ask that this record include General Order No. 32 issued by Commission under date of May 25th, 1928, and list of stations accompanying same, and all applications for licenses and licenses granted to stations up to the present time.

9. Submitted herewith and forming a part hereof are a great number of letters received by this station from dealers in radio apparatus showing the public interest, convenience and necessity of this station.

10. We plan and are financially and otherwise able to operate a 500 watt station on a non-commercial basis for the benefit of the owners of receiving sets and the radio public in general in this vicinity. We have worked
420 out plans with the radio trade in New Jersey for our mutual co-operation whereby each dealer will have the privilege of the use of the station without charge to said dealer except the cost of talent, for the purpose of establishing closer contacts between said radio trade and the public which use the receiving sets and improving programs and increasing the number of receiving sets in use, to the mutual advantage of the trade and the public.

11. The aforesaid plan was worked out through D. W. May, Incorporated, of Newark, New Jersey, one of the largest distributors of radio receiving sets in the country, and with over 1,000 dealers in the State of New Jersey, of which company this station is a subsidiary. This plan will result in the public good and benefit by improving business relations between the trade and public, improving programs

and stimulating public interest among the public in their local tradesmen, and generally improving broadcasting to and receiving by the public not only from the local standpoint but also otherwise.

12. Deponent has been interested in radio broadcasting since its beginning and has expended thousands of dollars in experimental work in connection therewith, which has resulted in the public benefit. He is primarily interested in developing the art of broadcasting which is still in its infancy and the resulting benefits to the public and trade, and not so much from a commercial standpoint. He is in the radio business and feels that he is improving the general radio situation and improving conditions by this plan.

13. He has not worked out this plan with the present station because its wattage is so low that it can scarcely be heard outside of the town, and has been waiting on the Commission to grant increase of power and better wavelength so that the station may have some usefulness.

We therefore respectfully submit that the Federal Radio Commission grant us the hearing on our previous application, and issue broadcasting license to this station as follows:

770 kilocycles—289.4 meters. Power—250 watts. Time—share time. Location—Newark, N. J.

421–455 We protest against the denial or revocation of present license, on the ground that it will be against the public interest, convenience and necessity of the citizens of New Jersey, on the ground that it will be a taking of property contrary to law, and on the ground that we are not receiving the equal rights to which we are entitled under the law with other stations.

D. WINTHROP MAY,
For Technical Radio Laboratory.

Sworn and subscribed to before me this 9th day of July, 1928.

[SEAL.]

A. E. E. MASON,
Notary Public, D. C.

My commission expires Dec. 6, 1928.

* * * * * * *

456 Applicant's Ex. #6.

Copy.

Technical Radio Laboratory.

Call Letters: W-T-R-L.

Station: Midland Park, N. J. General Offices: 380 Central Avenue, Newark, N. J.

State of New Jersey,
County of Essex, ss:

Harold C. Hogencamp, of full age, being duly sworn according to law, on his oath deposes and says, that:

1. I am President and Operator of Technical Radio Laboratory, of Midland Park, holder of radio station broadcasting license, call letters W-T-R-L.

2. I hold a Radio Operator's License, Commercial Second Class, issued by the Department of Commerce, Radio Division #423, valid for the operation of a broadcasting station, dated July 26, 1927.

3. I have been operating said station since the issuance of license to it dated December 18, 1926, #3025, down to the present time.

4. Attached hereto and made a part hereof, and marked Exhibit "A", is a copy of the regular programs of W-T-R-L for several weeks during the past months, which list is picked at random, and no attempt whatsoever is made to choose the best ones.

5. The Radio Commission contends that on a visit to our station on May 17, of this year, they found the station was not operating and in a dismantled condition. Before the inspection in dispute, the station was inspected on two occasions, on June 10th, 1927, and July 7th, 1927, by one of the inspectors of the New York office of the Commission. The New York office, knowing that the station operated only at night, and that it would be impossible to find me there in the daytime always telephoned in
457 advance to arrange for an appointment if they desired to inspect the station in the daytime. If the appointment was made, I arranged to meet the inspector, and the station was thoroughly inspected. It is absolutely

imperative, in order that an inspection can be made, that the operator be on hand, so that the transmitter can be started up. It is impossible to inspect a station unless the transmitter is operating, so that the frequency, and other things, can be checked.

6. Owing to the fact that our schedule, as shown in the attached sheets, clearly shows that our station does not operate two days in succession, but on practically alternate days, we many times make minor adjustments and necessary changes to our apparatus on the days that we are "off the air", always being careful never to change the oscillating circuit, except to adjust the condensers, in order to keep on the proper frequency, and I might further state that our station is equipped with the very latest Constant Frequency Meter, to keep our wave within the specified range.

7. The Commission further contends that W-T-R-L was not in operation, and had no regular transmission periods. The inaction of the Commission in not examining the station between July 7th, 1927, and May 17, 1928, seems a bit peculiar, in view of the fact that we had an application on file for increase of power and change in frequency, during the entire period. If the Commission for one moment thought that the station was not "on the air" they surely would have had sufficient proof to show that the station was not operating during the time the application was on file.

8. The Commission further contends that we did not operate on May 17, 1928 at 1:00 o'clock in the afternoon, when an inspection was made by two of their inspectors, at which time the New York office, from which they were sent, knew that no operator would be on hand, and that it would be impossible to start up the transmitter. The Commission also contends that the station has not been operating during the
past months. In answer to same, I annex hereto and
458 make a part hereof letters of H. D. Payne, of the
Modern Auto Service of Midland Park, New Jersey,
Ethanier Boyce, Collector of Taxes of Midland Park, William Touw, President of the Board of Health of Midland Park, and Fred G. Howard, which letters are marked Exhibit "B."

9. If reference is made to our regular program sheets, heretofore annexed hereto and marked Exhibit "A," it will readily be seen that our regular program was "on the air"

during the period the Commission contends our station was not operating.

10. The inspectors from the Radio Commission claim that our station was used as a "dog kennel." I might say that for a short period, several small puppies were kept in the same building, at the experimental end of our broadcasting station. They were in a section separated from the apparatus, and were in no position to interfere with the operation of the station. Our studio is not in the same building where the puppies were seen, but is in a building *w*uite some distance from the transmitter.

11. The inspectors from the Radio Commission also claim that our station was being used for the p*ru*pose of recharging storage batteries. It is absolutely essential that we recharge the batteries used in the operation of our sation, and at the time alleged inspection was made, the batteries for use at our station were being charged.

12. I feel that the Radio Commission is retaliating against this station by their actions during the pa*r*t few months, because our Mr. May had the temerity to appear before the Senate Committee in opposition to the recent confirmation of Commissioner O. H. Caldwell. All the charges set up against the station have arisen since that time, and seem to be an endeavor to injure us and practically wipe out our existence.

(Signed) HAROLD C. HOGENCAMP.

Sworn and subscribed to before me this 17th day of July, 1928.

(Signed) DOROTHY WALTER.

459 EXHIBIT "A."

Program of WTRL Week Ending January 15, 1927.

Sunday Jan. 9	2:00 to 4:00 P. M.	Religious Program. Organ Music.
Wednes. Jan. 12	7:00 to 7:30 P. M.	Sport Talk.
	7:30 to 9:00 P. M.	Miller's Orchestra.
Friday Jan. 14	7:00 to 7:30 P. M.	Sport Talk.
	7:30 to 8:00 P. M.	Dance Music.
	8:00 to 9:00 P. M.	Popular Songs.

Program of WTRL Week Ending June 4, 1927.

Sunday May 29	9:30 to 10:30 A. M.	Religious Songs.
	12:30 to 1:30 P. M.	Popular Music.
	3:00 to 4:00 P. M.	Memorial Day Patriotic Program.
Wednes. Jun. 1	7:00 to 8:00 P. M.	Baseball Scores. Dance Music.

Program of WTRL Week Ending November 12, 1927.

Sunday Nov. 6	4:00 to 5:00 P. M.	Religious Music.
Tuesday Nov. 8	7:00 to 7:30 P. M.	Sport Talk.
	7:30 to 9:00 P. M.	Operatic Selections.
Friday Nov. 11	7:00 to 7:30 P. M.	Sport Talk and News of Interest.
	7:30 to 9:00 P. M.	Popular Songs.
Satur. Nov. 12	7:00 to 7:30 P. M.	Football Results.

Program of WTRL Week Ending February 26, 1928.

Mon. Feb. 20	7:00 to 7:15 P. M.	Sport Talk.
	7:15 to 8:00 P. M.	Dance Orchestra (Records).
Wed. Feb. 22	2:00 to 4:00 P. M.	Washington's Birthday Program.
Friday Feb. 25	7:00 to 7:30 P. M.	Sport Talk and News of Interest.
	7:30 to 8:00 P. M.	Radio Talk (Discussion of Electric Receivers).
	8:00 to 9:00 P. M.	Classical Songs.

460 Program of WTRL Week Ending May 19, 1928.

Sunday May 13	2:00 to 4:00 P. M.	Religious Songs and Music.
Tues. May 15	7:00 to 7:30 P. M.	Baseball Talk.
	7:30 to 8:30 P. M.	String Music.

Friday May 18	7:00 to 7:30 P. M.	Sport Talk. Baseball Scores. News of Interest.
	7:30 to 8:00 P. M.	Violin Selections.
	8:00 to 9:00 P. M.	Dance Music.

Program of WTRL Week Ending July 14, 1928.

Sunday July 8	6:00 to 7:00 P. M.	Organ Selections.
Tues. July 10	7:00 to 7:30 P. M.	Baseball Scores. Sport Talk.
	7:30 to 8:30 P. M.	Operatic Selections.
Friday July 13	7:00 to 7:30 P. M.	Baseball Scores. Sport Talk. News of Interest.
	7:30 to 8:30 P. M.	Dance Music.

461 Midland Park, N. J., July 16, 1928.

EXHIBIT "B"

DEAR MR. HOGENCAMP:

I understand that the Radio Commission claims that your station has not been operating—especially during the month of May of this year.

I wish to recall the fact that one of your men stopped at my garage for gasoline on May 13 and again on May 20 (both times on Sunday afternoons) while he was conducting receiving tests. He was using a loop receiving set which was in operation in his car. Several others and myself listened to the W T R L program on this set while he was at the garage.

I have listened to W T R L on other occasions but especially recall the dates of these two times because we were so interested in the receiving set working in the car.

I hope that this may be of some value to you and that I will be able to hear many more programs from W T R L and that you will be able to secure the power and wavelength you desire, I am

Yours sincerely,
(Signed) H. D. PAYNE,
Modern Auto Service.
JACOB H. OLTHUIS, [SEAL.]
Notary Public.

462 Midland Park, N. J., July 16, 1928.

Technical Radio Laboratory,
Midland Park, N. J.

GENTLEMEN:

I wish to take this opportunity of telling you that I have listened to the programs of W T R L many times and that I believe your station has been of real value to our community.

I realize that your station has been operating under severe handicaps but you are filling a great need in Midland Park and this part of Bergen County.

I am informed that W T R L is to lose it's license through the actions of the Federal Radio Commission and I wish to protest against this injustice. It would be a great loss to the community to lose your station.

Thanking you for your past service and hoping that you will be able to continue the good work, I am

Yours,
(Signed) ETHANIER BOYCE,
Collector of Taxes.
JACOB H. OLTHUIS, [SEAL.]
Notary Public.

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463 Midland Park, N. J., July 16, 1928.

Station W T R L,
Midland Park, N. J.

GENTLEMEN:

I understand that the Federal Radio Commission is trying to take away your license, claiming that W T R L is inoperative.

I for one, and I know many others, listen to your programs with great interest, especially the local news talks on Friday nights. I believe that your station has become very necessary to our community and the town would suffer by its loss. I am very sorry that our Mayor is away on his vacation for I know that he would feel the same as I do about this matter and would assist you to the best of his ability in your fight against the Radio Commission.

If I may be of further assistance in this matter do not hesitate in calling upon me.

Sincerely yours,
(Signed) WILLIAM TOUW,
Pres. Board of Health, Borough of Midland Park.

[SEAL.] JACOB H. OLTHIUS,
Notary Public.

464 Midland Park, N. J., July 16, 1928.

I have assisted Mr. H. C. Hogencamp for the past year in the operation and experimental work done at W T R L and during this time have been the announcer at the station.

During this period W T R L has been "on the air" two, three, and sometimes four times a week. We have not been able to secure much high class talent but have broadcast the best programs we could under the severe handicaps inflicted by the Radio Commission. It is impossible to secure New York talent for a fifteen watt station.

Thruout the months of May and June of this year Mr. Hogencamp and myself carried on much experimental work both in transmission and in reception on this low wavelength (206.8 meters). Most of the experimental transmission (done of course after midnite) was along the lines of directional loop transmission. The work on reception was done with various makes and types of broadcast receivers including a portable loop set which was operated in my car while in motion. The purpose of these tests was to determine the service range, quality, and ease (?) of reception of W T R L on 1450 kilocycles and 15 watts power.

The findings of our tests were:

1. That it is very difficult to tune most receiving sets of the ordinary broadcast type to this low wavelength.

2. That there is much interference caused by the harmonies by the high powered, higher wave stations on and near this wave.

465 3. That power noises and electrical disturbances are at a maximum at and near this frequency.

4. That high powered stations operating on frequencies near 1,450 caused much interference and on some receivers drowned out our small station. This seemed to be due mostly to the fact that the receivers would not tune sharp on the zero end of the dials.

5. That practically all broadcast receivers have a tendency to crowd the low wave stations and give greater separation to the higher wave stations.

6. That it really would require many changes in receiver design to get proper reception on this low wavelength even tho the power noises, harmonies, and other disturbances, were not present.

7. That due to the low power (15 watts), coupled with these other causes, the service range of W T R L is very, very small.

A few years ago, before the advent of the Radio Commission and before high powered broadcasting was thought necessary a fifteen watt station could cover a large area, but today the air is saturated with super-power stations and this is impossible even with the medium powered stations; stations which were a few years ago considered "high powered" themselves. Today a five hundred watt
466 station is little better, as far as service range is concerned, than a fifty watt station was in the past. This despite the fact that receiving sets have advanced greatly during this same period.

Although I have only a friendly interest in the station and am not interest- financially I believe that rather than revoking its license the Radio Commission should do something entirely new, give W T R L a fair chance—more power and a better wave. If this is done I am sure of the fact that the Technical Radio Laboratory is prepared to give the public better service and better programs.

(Signed) FRED G. HOWARD.

[SEAL.] JACOB H. OLTHIUS,
Notary Public.

467-529½ GOVERNMENT EXHIBIT # 1.

Department of Commerce, Radio Division.

Office of Supervisor of Radio, U. S. Subtreasury Building,
New York, N. Y.

May 28, 1928.

Department of Commerce,
Radio Division,
Washington, D. C.

SIRS:

Pursuant to instructions contained in Division letter, addressed to all Supervisors of Radio, dated May 10, 1928, file 5306, 405, 79, I submit herewith report of inspection made of an inactive broadcasting station, assigned call letters WTRL, listed under the name of the Technical Radio Laboratory, owned by Mr. H. C. Hogancamp, located at 28 Sicomac Ave., Midland Park, N. J.

Inspectors Bogardus and Manning, attached to this office, inspected the premises where this station is located, on May 17, 1928. The apparatus was found to be partly dismantled and in inoperative condition; covered with dust and dirt, and three meters were missing from the panel board. There is no evidence to show that it has been used for a long period of time. Information obtained from a number of broadcast listeners residing in the vicinity of the station indicates that the transmitter has never been operated as a broadcasting station. As a matter of further information to the Radio Division and the Federal Radio Commission, this office has never heard this station on the air.

At the present time, the room which houses the radio equipment, is being used by Mr. Hogencamp, Sr., as a room for charging storage batteries, and also for raising dogs.

The younger Mr. Hogencamp, who owns the station, is employed in a radio store in Paterson, N. J.

In view of the above, there is no good reason why the Government should carry this station on its books any longer. It is believed desirable that the call letters be rescinded, and the station be stricken from the records.

Respectfully,

(Signed) ARTHUR BATCHELLER,
U. S. Supervisor of Radio.

AB:HS.

* * * * * * *

530

Exhibit No. 103.

Zone.	Total number of stations.	Total frequencies in use.	Total power.	Total C. P. for power.
First	121	64	228,135	1,250
Second	111	53	109,990	6,395
Third	116	54	59,535	34,015
Fourth	196	73	162,805	....
Fifth	129	74	67,145	74,300
Total	673	318	627,610	115,960

Zone.	Increase in power called for by C. P.'s
First	150
Second	5,715
Third	29,010
Fourth	....
Fifth	60,940
Total	95,815

531-538

First Zone.

State.	Total number of stations.	Total frequencies in use.	Total power.	Total C. P. for power.
Connecticut	5	3	2,100	..
Delaware	1	1	100	250
District of Columbia	3	3	1,150	..
Maine	3	3	5,350	..
Maryland	5	4	5,700	..
Massachusetts	18	15	18,910	..
New Hampshire	3	2	550	500
New Jersey	25	20	53,925	..
New York	48	34	127,390	500
Rhode Island	7	7	18,000	..
Vermont	2	2	110	..
Porto Rico	1	1	500	..
Total	121	64	228,135	1,250

Total increase in power for First Zone 150 watts Authorized by C. P.'s.

* * * * * * *

539

First Zone.

New Jersey—Population, 3,821,000; Area, 7514; Percentage on Basis of Populaion, 2.795.

Station.	Frequency.	Power.	C. P. for power.
WJZ	660	30000	
WLWL (WMCA)	810	5000	
WOR	710	5000	
WPG	1100	5000	
WGL (WODA)	1020	1000	
WHAP (WMSG-WBNY)	1270	1000	
WODA (WGL)	1020	1000	
WCAM (WFAN)	1340	500	
WCAP (WOAX)	1250	500 1000 (6 to 6)	
WKBO (WKBQ-WCGU)	1370	500	
WMCA (WLWL)	810	500	
WOAX (WCAP)	1250	500	
WPCH (WRNY)	920	500	
WQAO-WPAP (WHN)	760	500	
WRNY (WPCH)	920	500	
WAAT (WGBB-WEVD)	1220	300	
WAAM (WGCP-WNJ)	1120	250	
WCDA (WINR-WCOH)	1410	250	
WGCP (WNJ-WAAM)	1120	250	
540			
WIBS (WLBX-WMBQ)	1470	250	
WJBI	1140	250	
WNJ	1120	250	
WBMS (WCLB-WGOP-WWRL)	1500	15	
WTRL (WMRJ-WHPP)	1450	15	
WHPP (WMRJ-WTRL)	1450	10	
Total number of stations—25.	Total frequencies in use—20.	Total power 53,925 watts.	

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*1000 watts used by station W C A P during the day.

541

First Zone.

New York—Population, 11,550,000; Area, 47,654 Square Miles; Percentage on Basis of Population, 1.218.

Station.	Frequency.	Power.	C. P. for power.
WEAF	610	50000	
WGY	790	50000	
WHAM	1070	5000	
WKBW	1380	5000	
WABC (WBOQ)	970	2500	
		5000 (6 to 6)	
WBBR (WETH)	1170	1000	
WFBL	1160	750	
WGR	990	750	
WKEN (WSVS)	1470	750	
WMAK	550	750	
WBBC (WSGH-WSDA)	1320	500	250 decrease
WBNY (WHAP-WMSG)	1270	500	
WBOQ (WABC)	970	500	
WCAD	1230	500	
		1000 (6 to 6)	
WCGU (WKBO-WKBQ)	1370	500	
WEVD (WAAT-WGBB)	1220	500	
WGBS (WIP-WOO)	860	500	
WHAZ	980	500	
WHN (WQAO-WPAP)	760	500	

542

Station.	Frequency.	Power.	C. P. for power.
WKBQ (WKBO-WCGU)	1370	500	
WMAC	1330	500	
WMSG (WBNY-WHAP)	1270	500	
WNYC	570	500	
WOKO	1390	500	
WOKT	1430	500	250 decrease
WSGH-WSDA (WBBC)	1320	500	
WSYR	1020	500	
(WHEC)	1180	250	
(WABO)		500 (6 to 6)	
WCOH (WCDA-WINR)	1420	250	
WLBX (WIBS-WMBQ)	1470	250	

Station.	Frequency.	Power.	C. P. for power.
WLTH (WBBR)	1170	250	....
WEBR	1240	200	....
WGBB (WAAT-WEVD)	1220	150	....
WIBX	1260	150	....
		300 (6 to 6)	......
WINR (WCAD-WCOH)	1420	150	....
WCLB (WBMS-WWRL-WGOP)	1500	100	....
WGOP (WCLB-WWRL-WBMS)	1500	100	....
WMBO	1360	100	....
WMBQ (WIBS-WLBX)	1470	100	....
WWRL (WCLB-WBMS-WGOP)	1500	100	....

543-650

WLCI	1210	50	....
WNBF	1450	50	....
WSVS (WKEN)	1470	50	....
WLBH	1290	30	....
WOCL	1340	25	....
WNBQ	1460	15	....
WMRJ (WHPP-WTRL)	1450	10	....
WNBZ	1290	10	....
Total number of stations—48.	Total frequencies in use—34.	Total power 127,390 watts.	Total C. P. for power 500 watts.

Decrease in power called for by C. P.'s 500 watts.

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*5000 watts used by station W A B C during the day.
1000 watts used by station W C A D during the day.
500 watts used by station WHEC-WABO during the day.
300 watts used by station W I B X during the day.

651 69

Federal Radio Commission, Washington, D. C.

General Order No. 32.

May 25, 1928.

The Commission after an examination of the applications for renewal of station licenses of the below named stations has not been satisfied that public interest, convenience or necessity will be served by granting these applications.

It extends for a period of sixty days the existing licenses of these stations subject to all modifications and extensions, to terminate at three o'clock A. M., August 1st, 1928.

The Commission fixes Monday, July 9th, ten o'clock A. M., in its offices in Washington, D. C., as the time and place for a hearing for each of these applications.

The stations to which this order applies are as follows:

To station —— and others.

FEDERAL RADIO COMMISSION,
By IRA E. ROBINSON,
Chairman.

652 73.

Federal Radio Commission, Washington, D. C.

May 26, 1928.

List of Stations to Receive a Copy of General Order No. 32 and the Accompanying Letter, Arranged by Zones.

Zone No. 1.

New Jersey Broadcasting Corp.,
Radio Station WIBS,
Elizabeth, N. J.

WBMS Broadcasting Corp.,
Radio Station WBMS,
Union City, N. J.

Standard Cahill Co. Inc.,
Radio Station WKBQ,
New York, N. Y.

Camith Corporation,
Radio Station WKBO,
Jersey City, N. J.

Amateur Radio Specialty Co.
Radio Station WSGH-WSDA,
Brooklyn, N. Y.

Browning Drake Corp.,
Radio Station WLBM,
Cambridge, Mass.

Stanley N. Read,
Radio Station WRAH,
Providence, R. I.

Technical Radio Laboratory,
Radio Station WTRL,
Midland Park, N. Y.

Bliss Electrical School,
Radio Station WBES,
Takoma Park, Md.

Harry Leonard Sawyer,
Radio Station WRES,
Quincy, Mass.

William H. Reuman,
Radio Station WWRL,
Woodside, N. Y.

May Radio Broadcast Corp.
Radio Station WGCP,
Newark, N. J.

John H. Brahy,
Radio Station WLBX,
Long Island City, N. Y.

Joseph J. Lombardi,
Radio Station WLBH,
Farmingdale, N. Y.

Radiotel. Mfg. Co.,
Radio Station WINR,
Bay Shore, N. Y.

Bronx Broadcasting Co.,
Radio Station WHPP,
Englewood Cliffs, N. J.

A. H. Waite & Co., Inc.,
Radio Station WAIT,
Taunton, Mass.

Fred B. Zittell, Jr.,
Radio Station WGOP,
Flushing, N. Y.

William S. Pote,
Radio Station WLOE,
Chelsea, Mass.

Danb*y*ry Broadcasting Station,
Radio Station WCON,
Danbury, Conn.

Concourse Radio Corp.,
Radio Station WPCH,
Hoboken, N. J.

Robert S. Johnson,
Radio Station WJBI,
Red Bank, N. J.

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Titus-ets Corporation,
Radio Station WOKT,
Binghamton, N. Y.

Peter J. Prinz,
Radio Station WMRJ,
Jamaica, N. Y.

Bremer Broadcasting Corp.
Radio Station WAAT,
Jersey City, N. J.

Westchester Broadcasting Corp.,
Radio Station WCOH,
Greenville, N. Y.

Brooklyn Broadcasting Corp.,
Radio Station WBBC,
Brooklyn, N. Y.

Debs Memorial Radio Fund,
Radio Station WEVD,
Woodhaven, N. Y.

International Broadcasting Corp.,
Radio Station WGL,
Secaucus, N. J.

Paul J. Gallhofer,
Radio Station WMBQ,
Brooklyn, N. Y.

Italian Educational Broadcasting,
Radio Station WCDA,
Cliffside Park, N. J.

Jacob Conn,
Radio Station WCOT,
Providence, R. I.

U. S. Broadcast Corp.,
Radio Station WCGU,
Coney Island, N. Y.

Arthur Faske,
Radio Station WCLB,
Long Beach, N. Y.

Hotel Chateau,
Radio Station WCBM,
Baltimore, Md.

Massachusetts Educational Society,
Radio Station WMES,
Boston, Mass.

654 Zone 2.

W. F. Jones Broadcasting, Inc.,
Radio Station WFJC,
Akron, Ohio.

Louis G. Baltimore,
Radio Station WBRE,
Wilkes-Barre, Pa.

W. P. Williamson, Jr.,
Radio Station WKBN,
Youngstown, Ohio.

Aimone Electric,
Radio Station WLBY,
Iron Mountain, Mich.

Rev. John W. Sproul,
Radio Station WMBJ,
McKeesport, Pa.

Cleveland Radio Broadcasting Corp.,
Radio Station WJAY,
Cleveland, Ohio.

Ernest F. Goodwin,
Radio Station WJBK,
Ypsilanti, Mich.

Howard R. Miller,
Radio Station YIAD,
Philadelphia, Pa.

College of Wooster,
Radio Station WABW,
Wooster, Ohio.

J. H. Thompson,
Radio Station WQBZ,
Weirton, W. Va.

Petoskey High School,
Radio Station WBBP,
Petoskey, Mich.

Berachah Church, Inc.,
Radio Station WRAX,
Philadelphia, Pa.

Wm. F. Gable Co.,
Radio Station WFBG,
Altoona, Pa.

Ruffner Junior High School,
Radio Station WBBW,
Norfolk, Va.

Grace Covenant Pres. Church,
Radio Station WBBL,
Richmond, Va.

W. Reynolds & T. J. McGuire,
Radio Station WTAZ,
Chesterfield Hills, Va.

Markle Broadcasting Corp.
Radio Station WABF,
Kingston, Pa.

Keystone Broadcasting Co., Inc.,
Radio Station WFAN,
Philadelphia, Pa.

Mack's Battery Co.,
Radio Station WMBS,
Lemoyne, Pa.

C. R. Cummins,
Radio Station WRAK,
Erie, Pa.

Verne & Elton Spencer,
Radio Station WGM,
Jeannette, Pa.

Youngstown Broadcasting Co., Inc.,
Radio Station WMBW,
Youngstown, Ohio.

Ray W. Waller,
Radio Station WEBE,
Cambridge, Ohio.

Foulkrod Radio Eng. Co.,
Radio Station WFKD,
Frankford, Pa.

Braun's Music House,
Radio Station WBMH,
Detroit, Mich.

Havens and Martin, Inc.,
Radio Station WMBG,
Richmond, Va.

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K. L. Ashbacker,
Radio Station WKBZ,
Ludington, Mich.

St. John's Catholic Church,
Radio Station WHBC,
Canton, Ohio.

J. Magaldi, Jr.,
Radio Station WABY,
Philadelphia, Pa.

Park View Hotel,
Radio Station WFBE,
Cincinnati, Ohio.

Zone 3.

None.

Zone 4.

Frederick A. Trebbe, Jr.,
Radio Station WLBO,
Galesburg, Ill.

Wm. Gushard Dry Goods Co.,
Radio Station WJBL,
Decatur, Ill.

American Bond & Mortgage Co.,
Radio Station WMBB-WOK,
Homewood, Ill.

Harold L. Dewing & Chas. Messter,
Radio Station WCBS,
Springfield, Ill.

Wenona Legion Broadcasters,
Radio Station WLBI,
Wenona, Ill.

Knox College,
Radio Station WFBZ,
Galesburg, Ill.

James L. Bush,
Radio Station WDZ,
Tuscola, Ill.

Carthage College,
Radio Station WCAZ,
Carthage, Ill.

The Liberty Weekly, Inc.,
Radio Station WLIB,
Chicago, Ill.

J. A. Kautz (Kokomo
Tribune),
Radio Station WJAK,
Kokomo, Ind.

Donald A. Burton,
Radio Station WLBC,
Muncie, Ind.

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Michael T. Rafferty,
Radio Station WNBA,
Forest Park, Ill.

Beardsley Specialty Co.,
Radio Station WHBF.
Rock Island, Ill.

Victor C. Carlson,
Radio Station WEHS,
Evanston, Ill.

Illinois Broadcasting Corp.,
Radio Station WTAS,
Elgin, Ill.

Tate Radio Co.,
Radio Station WEBQ,
Harrisburg, Ill.

D. H. Lentz, Jr.,
Radio Station WJBA,
Joliet, Ill.

James Milliken University,
Radio Station WBAO,
Decatur, Ill.

Illinois Stock Medicine
Brdcstg. Corp.,
Radio Station WTAD,
Quincy, Ill.

Great Lakes Radio Brdcstg.
Corp.,
Radio Station WBCN,
Chicago, Ill.

Knox Battery & Elec. Co.,
Radio Station WKBV,
Brookville, Ind.

Harold Wendell,
Radio Station WLBT,
Crown Point, Ind.

Lombard College,
Radio Station WRAM,
Galesburg, Ill.

Sanders Bros.,
Radio Station WKBB,
Joliet, Ill.

Peoria Heights Radio Laboratory.
Radio Station WMBD,
Peoria Heights, Ill.

Permil N. Nelson,
Radio Station WKBS,
Galesburg, Ill.

Hummer Furniture Co.,
Radio Station WJC,
La Salle, Ill.

Fred L. Schoenwolf,
Radio Station WKBI,
Chicago, Ill.

E. Dale Trout,
Radio Station WLBQ,
Atwood, Ill.

Williams Hardware Co.,
Radio Station WTAX,
Streator, Ill.

Westinghouse Elec. & Mfg. Co.,
Radio Station KFKX,
Chicago, Ill.

Emil Denemark, Inc.,
Radio Station WEDC,
Chicago, Ill.

World Battery Co., Inc.,
Radio Station WSBC,
Chicago, Ill.

Maurice Mayer,
Radio Station WPEP,
Waukegan, Ill.

Goodson & Wilson, Inc.,
Radio Station WHFC,
Chicago, Ill.

W. C. L. S., Inc.,
Radio Station WCLS,
Joilet, Ill.

Francis K. Brigman, Inc.,
Radio Station WFKB,
Chicago, Ill.

Lane Technical High School,
Radio Station WLTS,
Chicago, Ill.

Calumet Broadcasting Co.,
Radio Station WQJ,
Chicago, Ill.

Zenith Radio Corp.,
Radio Station WSAX,
Chicago, Ill.

Roland G. Palmer &
Anthony Coppotelli,
Radio Station WJBZ,
Chicago Heights, Ill.

Clinton R. White,
Radio Station WCRW,
Chicago, Ill.

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657 The Radio Club, Inc.,
Radio Station WRAF,
La Porte, Ind.

Dr. George F. Courrier,
Radio Station WWAE,
Hammond, Ind.

Albert C. Dunkel,
Radio Station KGFB,
Iowa City, Iowa.

Penn College,
Radio Station KFHL,
Oskaloosa, Iowa.

Central Radio Co.,
Radio Station KPNP,
Muscatine, Iowa.

Chester W. Keen,
Radio Station WCWK,
Ft. Wayne, Ind.,

Morningside College,
Radio Station KFMR,
Sioux City, Iowa.

Charles W. Greenley,
Radio Station KGCA,
Decorah, Iowa.

Harry F. Paar,
Radio Station KWCR,
Cedar Rapids, Iowa.

Poling Electric Co.,
Radio Station WIAS,
Ottumwa, Iowa.

Atlantic Automobile Co,
Red Oak Radio Corp,
Lessee,
Radio Station KICK,
Red Oak, Iowa.

First Methodist Episcopal
Church,
Radio Station KFVG,
Independence, Kans.

Dr. C. S. Stevens,
Radio Station WMBE,
White Bear Lake, Minn.

Harry O. Iverson,
Radio Station KFDZ,
Minneapolis, Minn.

Hegstad Radio Co.,
Radio Station KGHC,
Slayton, Minn.

Kingshighway Presbyterian
Church,
Radio Station WMAY,
St. Louis, Mo.

Wilson Duncan Broadcasting Co.,
Radio Station KWKC,
Kansas City, Mo.

Western Union College,
Radio Station KWUC,
Le Mars, Iowa.

Concordia Broadcasting Co.,
Radio Station KGCN,
Concordia, Kans.

Fred W. Herrmann,
Radio Station KGEQ,
Minneapolis, Minn.

Times Pub. Co. Inc.,
Radio Station WFAM,
St. Cloud, Minn.

The Principia,
Radio Station KFQA,
St. Louis, Mo.

St. Louis Truth Center, Inc.,
Radio Station KFWF,
St. Louis, Mo.

Foster-Hall Tire Co.,
Radio Station KGBX,
St. Joseph, Mo.

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Omaha Board of Education,
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Radio Station KFOX,
Omaha, Nebr.

Ervin Taddiken,
Radio Station KGBY,
Columbus, Nebr.

The Farmers & Merchants
Cooperative Radio Corp.
of America,
Radio Station KGCH,
Wayne, Nebr.

Central Radio Electric Co.,
Radio Station KGES,
Central City, Nebr.

Otto F. Sothman,
Radio Station KGFW,
Ravenna, Nebr.

Hotel Yacey,
Radio Station KGEO,
Grand Island, Nebr.

Frank J. Rist,
Radio Station KGDW,
Humbolt, Nebr.

Federal Live Stock Remedy Co.,
Radio Station KGBZ,
York, Nebr.

Cutler's Radio Broadcasting Service Inc.
Radio Station KGCR,
Brookings, S. D.

Home Auto Company,
Radio Station KGDA,
Dell Rapids, S. D.

Callaway Music Co.,
Radio Station WKBH,
LaCrosse, Wis.

The Electric Farm,
Radio Station WIBU,
Poynette, Wis.

Capital Times-Strand Theatre Station
Radio Station WIBA,
Madison, Wis.

C. E. Whitmore.
Radio Station WCLO,
Kenosha, Wis.

Irving Zuelke, Inc.
Radio Station WAIZ,
Appleton, Wis.

R. J. Rockwell,
Radio Station WNAL,
Omaha, Nebr.

Radio Electric Co.,
Radio Station KDLR,
Devils Lake, N. Dak.

J. Albert Loesch,
Radio Station KGDY,
Oldham, S. D.

Edward A. Dato,
Radio Station WKDR,
S. Kenosha, Wis.

Beloit College,
Radio Station WEBW,
Beloit, Wis.

Fon du Lac Commonwealth Reporter,
Radio Station KFIZ,
Fon du Lac, Wis.

St. Norbert's College,
Radio Station MFAE, WHBY,
West de Pere, Wis.

Mikadow Theatre (Francis M. Kadow)
Radio Station WOMT,
Manitowoc, Wis.

Evening Wisconsin Co.,
Radio Station WGWB,
Milwaukee, Wis.

Henry Haraldson & Carl Thingstad,
Radio Station KGFN,
Aneta, N. D.

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Zone No. 5.

Los Angeles County Forestry Dept.
Radio Station KFPR,
Los Angeles, Calif.

Dr. L. L. Sherman,
Radio Station KFUS,
Oakland, Calif.

E. F. Peffer,
Radio Station KGDM,
Stockton, Calif.

Koos Radio Sales & Service, Inc.,
Radio Station KOOS,
Marshfield, Ore.

University of Utah,
Radio Station KFUT,
Salt Lake City, Utah.

The following list of portable broadcasting stations were sent copies of General Order No. 34, extending their licenses thirty days until July 1st, when they all expire:

Zone No. 1.

The Edison Electric Illuminating Co. of Boston,
Radio Station WATT.

Atlantic Broadcasting Corp.
Radio Stations WRMU and WGMU.

Charles H. Messter,
Radio Station WCBR,

Zone No. 2.

Harl Smith,
Radio Station WOBR.

Zone No. 3.

None.

Zone No. 4.

C. L. Carrell,
Radio Stations WKBG, WIBM, WIBJ, WHBM and WBBZ.

Brant Radio Power Company,
Radio Station KGFO.

Zone No. 5.

Jay Peters,
Radio Station KGGM.

End.

[Endorsed:] Appeal No. 4835. Technical Radio Laboratory vs. Federal Radio Commission. Additional Record to be added to papers filed herein October 9, 1928.

665 *Federal Radio Commission's Appendix.*

Designated by Appellee and Objected to by Appellant.

At a hearing before the Federal Radio Commission on July 23, 1928, involving the renewal of licenses of approximately 110 broadcasting stations, including appellant's station WTRL, certain testimony was adduced by four highly-qualified electrical engineers, all specialists in the field of radio engineering. A synopsis of this testimony is here set forth in order that the Court may be informed of the physical factors operative in the field of radio communication.

Testimony of John V. L. Hogan (R. Doc. 119, pages 11-114).

The broadcasting sound by means of radio waves is a method of communication similar to other forms of communication in that three components are required: a transmission system, a conveying medium, and a receiving system.

In radio communication, electro-magnetic forces act as the conveying medium. These forces travel in the form of waves and are generally referred to as "electro-magnetic waves." They have a uniform speed of 186,000 miles (299,820 kilometers) per second. These waves may be distinguished by their length and frequency, their length being inversely proportioned to their frequency. The product of the length of a particular wave expressed in meters and the frequency of that wave per second expressed in kilocycles is equal to the number 299,820. Thus a frequency of 1,000 kilocycles (1,000,000 cycles) per second produces waves 300 meters in length.

Radio Waves are Produced by an Alternating Electric Current.

All radio waves are the result of the flow of an electric current which alternates or oscillates. The frequency of alternation is usually expressed in terms of cycles per second. In radio communication, alternating currents are from 10,000 to 30,000,000 cycles per second and are used to produce these electro-magnetic waves.

666 Broadcasting, as the term is commonly used, requires the use of those waves having a frequency between 550,000 and 1,500,000 per second, which means that alternating currents of corresponding frequencies or cycles are necessary in the production of these waves.

Nature of Sound.

In order to understand the transmission of sound through the use of these waves, it is necessary to examine the physical characteristics of sound. The source of any sound is a body in a state of movement or vibration. The vibrations so produced are transmitted through a medium, usually the air, upon which is imposed this vibratory motion. A sound is "heard" when the auditory nerves are excited by these air vibrations or air waves.

Only air vibrations of certain frequency are audible to man. The extreme range is said to be from 16 to 16,000 vibrations per second and is variable with the individual. The lowest note produced by a piano has a vibration rate of 27 per second; the highest, a rate of 4,096 per second; middle C has a vibration rate of 256.

In most cases, a vibrating object has not only a fundamental vibration rate as in the instances given above, but also secondary vibration rates corresponding to multiples of the fundamental rate. An analysis of the note produced by middle C of the piano discloses vibration rates of 256 per second (the fundamental note) and vibrations of 516, 1,032, 2,064, etc. (the harmonics of the fundamental note). An analysis of vibration set up by the human voice discloses notes of many different vibration periods and in corresponding harmonics.

Problem of Radio Broadcasting.

The problem of radio broadcasting is to produce these air vibrations of audible frequency in an electrical form in order that they may be transmitted to distant points.

667 Radio waves are not air waves but electrical forces and, hence, are not audible. In any event, they are

not within the range of audibility, by reason of their extremely high vibration periods.

Air vibrations are reproduced in an electrical form by the following method: When a tuning fork, having the pitch of middle C, is set to vibrating, it impresses its vibrations (256 per second) upon the air. To these air waves the human ear is responsive and if these same air waves travel to the microphone of the broadcasting station, an electrical current is produced having the same frequency or period of vibration as the tuning fork. This electrical current is conveyed by wire from the microphone through amplifying tubes which increase the intensity of the current but do not change its frequency. The current finally emerges from the amplifying system as a very intense alternating current, retaining the initial frequency. It is referred to as the "audio frequency current." It is then imposed upon another alternating current of a very high frequency known as the "radio frequency current." The latter current has the capacity to produce a carrier wave which travels in all directions to great distances.

The union of the audio frequency current and the radio frequency current results in a modulated current retaining the characteristics of its components. As it flows through the antenna of the broadcasting station, it produces in space modulated electro-magnetic waves.

Characteristics of Electro-Magnetic waves.

Although these waves are not tangible, they are genuine force competent to do a substantial amount of work. They travel in all directions with the speed of light. They do not affect the senses. They attentuate or become secure as the distance from their source increases. They are subject to absorption and, as they travel through space, they are affected by many other factors. At any given point, their
intensity may vary from hour to hour, sometimes
668 from month to month, and, certainly, from night to
night and from season to season. In general, it may
be said that any condition of the earth or the earth's atmosphere that causes variability in their reflection, refraction or absorption, likewise causes variations in their intensity or strength at any given point.

Analysis of Modulated Waves.

An analysis of the modulated waves produced by middle C, as above described, shows the existence of waves of three different frequencies. Assuming that the carrier wave, produced by the radio frequency current, has a frequency of 100,000 cycles (1,000 kilocycles), the second and third waves will have frequencies of 100,256 and 99,744 as the result of the modulation. In other words, that frequency represented by the note transmitted is added to and subtracted from the frequency of the carrier wave, resulting in the presence of three waves above mentioned.

In the transmission of a musical program, it is necessary to use the carrier wave for the simultaneous transmission of many notes of given frequencies. The reproduction of an orchestra selection with absolute fidelity, may require the use of practically all the audible frequencies, i. e., double the number of audible frequencies. A program of this nature will still be heard with a remarkable degree of fidelity if the number of frequencies used is limited to 10,000. A band of frequencies of this number will permit the transmission of a large portion of the vibrations within the range of audibility.

If any number of notes are simultaneously translated into electrical currents at the microphone, in the same manner as explained in the case of a note of 256 vibrations, the carrier wave is modulated by all the notes and becomes in reality a band of waves or a band of frequencies.

Only Certain Frequencies are Adaptable for Broadcasting.

In broadcasting, a band of frequencies of 10 kilocycles (10,000 cycles) is utilized. The necessity of using a band of this width or number for the purpose of securing
669 a faithful reproduction of the program transmitted,
automatically places a limit on the number of stations that may operate. Within the entire range of frequencies adaptable to radio communication, only a certain portion thereof is of practical use for broadcasting purposes. Those frequencies between 10,000 and 1,500,000 (550 to 1,500 kilocycles) are known as the broadcast band

and are peculiarly adapted for the transmission and reception of program material.

Receiving sets responsive to the frequencies within this band may be designed and manufactured at a relatively small cost. It is difficult and expensive to design receiving apparatus having desirable selectivity and range for frequencies lower than 500 kilocycles. Frequencies higher than 1,500 kilocycles are subject to such great variation in intensity at any given point that reliable broadcasting service cannot be secured by their use.

The usual type of broadcast receiver is designed to accom-odate all those waves in the broadcast band and select, from the entire band, those frequencies used by different stations. However, they are not adapted to the reception and selection of frequencies above or below the broadcast band.

Physical and economic factors thus limiting the broadcasting to the frequencies between 550 and 1,500 kilocycles, the number of available channels within the band is likewise limited. The necessity of providing for each station an individual band of 10 kilocycles limits the broadcasting of programs to a total of 96 communicating channels.

The Highest Degree of Fidelity is Not Obtained Through the use of a Ten-kilocycle Band.

As has been explained above, a ten-kilocycle separation between stations is not sufficient to provide programs of the highest degree of fidelity, the restriction to a band of ten
kilocycles being in fact a compromise with the ideal
670 in order to obtain a maximum number of channels.
If any change were to be made in the width of channels for the purpose of providing a better broadcasting service, it would necessarily have to be made by increasing the width and would result in fewer channels.

Number of Stations Limited by Reason of Heterodyne Interference.

In the present stage of development of the radio art, the transmitting apparatus of a broadcasting station is incapable of maintaining a constant frequency. The carrier waves of stations fluctuate in some cases to the extent of

1,000 to 2,000 cycles, although extreme constancy has been obtained by certain stations as evidenced by the observations made by the Bureau of Standards. The carrier waves of many stations of both low and medium power vary in excess of 500 cycles.

This prevalent variation gives rise to a phenomenon known as interference. If two stations operate on the same channel and their carrier waves differ in frequency to the extent of 20 to 30 cycles or more, the interaction of their carrier waves within a receiving set tuned to their channel, create an audible note having a vibration period equal to the difference of the frequencies of the two waves. The intensity of the note depends upon the strength of the waves received. This note, being the result of several forces, is called a heterodyne or beat note and its presence is destructive to program reception. It will appear whenever the degree of separation of the two carrier waves represents a number within the range of audibility. A 10,000-cycle separation produces an audible note but, ordinarily, this is not noticeable to the average listener and causes no discomfort or distortion of the program. For this reason, a ten-kilocycle separation between the carrier waves and two stations is a reasonable requirement in that it makes possible a maximum number of channels.

Elimination of Heterodyne Interference.

The entire elimination of this type of inteference can only be accomplished as a practical proposition by (1) re-
stricting the use of a channel to a single station, or
671 (2) maintaining such a geographic separation be-
tween stations using the same channel that the car-
rier waves of two stations never enter the same territory with sufficient intensity to produce this interference.

Considering the existing equipment of broadcasting stations, the possibility of heterodyne interference must be taken into consideration in the assignment of power and location of two stations operating on the same frequency.

Service Area of Stations in Absence of Heterodyne Interference.

The area over which a broadcasting station gives dependable service is determined, in the first instance, by the power utilized, and, secondly, by the condition of the earth's atmosphere. As has been explained, the service area of a station of a given power varies greatly from hour to hour, from night to night, and from season to season. The greatest variation probably occurs between daylight and darkness. Radio waves travel to much greater distance during the night than during the day. They are more constant during the fall and winter months than during the summer. Other factors influencing the service area may be enumerated as follows: The presence of interference from static, electrical apparatus and that created by other stations.

By reason of the many factors involved, the definition of "service area" for any given station must be made very flexible. An approximation of the distance over which broadcasting stations will provide reliable service in the absence of interference from other stations operating on the same channel, may be given by the following illustrations, it being understood that this data relates to transmission conditions existing during the months in which radio is most used, i. e., from September until March, and during the time of day when radio is most used, i. e., those hours immediately after darkness.

672 On this basis, service to the listener may be classified into three types, corresponding to the intensity or strength of the transmissions or signals of a station over various areas. It is possible to definitely measure the strength of any transmission at a given point, the unit of measurement universally adopted being a "field intensity unit."

A signal or transmission of ten field intensity units is ordinarily capable of giving what is fairly called very good service, i. e., service which will satisfy the average city dweller who is located where noises produced by motors and other electrical apparatus must be overcome, in addition to the interference produced by other stations operating on adjacent frequencies.

A signal strength of two field intensity units gives good service within reasonable limits to the suburban dweller because, in his location, there is a lower level of interfering noises.

A signal of two-tenths of a field intensity unit gives fair service under rural conditions because of the absence of electrical interference. This service, however, is conditioned on the fact that static is absent.

As has been explained, the area over which a station will give the above described services depends upon the power of that station as well as the many other factors influencing the electro-magnetic waves after they leave the transmitting station. For the present purpose, the effect on the service area of two stations operating on the same channel is not considered.

The following figures indicat the average distances to which stations of given power may provide the three types of service mentioned above. A 50-watt station is competent to produce very good service at a distance of two miles or less. It will produce good service corresponding to two intensity units at a distance of ten miles or less, and it will produce rural service corresponding to two-tenths of a field intensity at 100 miles (p. 34).

673 A 500-watt station will produce very good service at a distance of six miles or less, good service at a distance of thirty miles or less, and rural type of service at a distance of 300 miles or less (p. 34).

A 5,000-watt station will produce very good service over a zone having a radius of twenty miles, good service over a 100-mile radius, and rural service over 1,000 miles (p. 34).

A 50,000-watt station will give very good service over a distance of 60 miles or less, good service over 300 miles or less, and rural service over a distance of 3,000 miles (p. 34).

A 100-watt station will produce very good service at three miles, good service at fifteen miles, and rural service at 150 miles (p. 35).

A 1,000-watt station will produce very good service at nine miles, good service at 45 miles, and rural service at 450 miles.

Low intensities give satisfactory service only in the absence of electrical interference. The figures given above are approximations justified by observation and actual measurements. They are average values. A 500-watt station, for example, will not produce service of the kind described over the distances indicated if it is in a poor location or if the character of the territory, over which its transmissions are sent, is unfavorable. Poor station design will restrict service area. Another 500-watt station, because of better location or better station design, may have a greater service area than indicated by the above figures. Because the standards of listeners vary, these distances are also subject to variation from a standpoint of each individual. At the best, they are approximated averages giving an indication of what may be considered fair ranges for the several types of services mentioned. If one considers only the factors of power and distance on a theoretical basis, the above figures will be approximately one-half of the theoretical distances. Practical experience, however, makes it necessary to consider the addition of the other factors involved and by including these latter factors, a practical or empirical formula is obtainable.

674 Service Area Greatly Diminished by the Presence of Another Station.

Areas receiving the transmissions of two stations operating on the same channel, are termed "nuisance areas" whenever the degree of separation of the carrier waves of the two stations is great enough to produce the heterodyne interference, previously described. As has been stated, receiving sets in this area will react to both transmissions.

Nuisance Areas of Stations.

It is impossible to give a fixed nuisance area for a station of a given power applicable to all conditions, but it is possible, as a result of observation and measurement of many signal intensities, to conclude that under average winter-night conditions, one may expect to get severe heterodyne interference within a certain distance of a station of a given power. This interference range may be computed by comparing the field intensities of the two stations at different points. Wherever a station produces a signal having a value of more than seven-hundredths of a field intensity unit, heterodyne interference will result if the transmissions of another station operating on the same frequency enter this area.

During the average winter night, the nuisance radius of a 50-watt station is 300 miles; a 100-watt station, 450 miles; a 500-watt station, 900 miles; a 1,000-watt station, 1,350 miles; a 5,000-watt station, 3,000 miles; and a 50,000-watt station beyond the limits of the country. If heterodyne interference is to be avoided during the evening hours of winter, two stations can not be permitted to operate unless their geographical separation is such that the nuisance do not overlap.

From the above figures it is apparent that a 5,000-watt station has a nuisance area extending over the entire country. It is possible, however, to accommodate several stations of 1,000-watt capacity or less upon the same frequency or channel without causing appreciable heterodyne interference.

675 The heterodyne interference is proportional in any case to the product of intensities of the two carrier waves causing it. Without giving any absolute figure as to the radio of signal intensity that will produce a minimum heterodyne note, it is safe to say that the intensity of the interfering station should be less than one-thousandth and probably less than one-ten thousandth of the intensity of the station to which it is desired to listen. On this basis, the distances given above would produce severe interference in the case of rural service; that is to say, the duplication of 50-watt stations 600 miles apart would materially reduce the service area of both stations by reason of the fact that the intensity of seven-hundredths of a field intensity unit is a very substantial proportion of the two-tenths field intensity unit providing such service.

It is apparent from the above that whenever stations are placed upon the same channel without sufficient geographic separation, the service range of each station is greatly reduced. However, there will be near each station a small area in which service may be had in spite of the interference from the distant station. This area will increase as the distance between the two stations is increased. The nearer two stations of the same frequency are placed geographically, the smaller will be the substantial interference-free zone around each of these stations. It should be considered that these conditions apply to night time operation and that during the day time stations may use the same frequency with relatively small geographical separation without causing this form of interference.

Full Service Range for Each Station Desirable.

An ideal broadcasting service for this country contemplates stations having their full service range, or, at least, a substantial part of that service range. To attain this ideal situation, it is necessary that only one station of 1,000-watt power or greater be allowed to operate upon a given channel. 500-watt stations may be duplicated if they are
kept about 1,800 miles apart, and under this arrange-
676 ment it would be possible for three 500-watt stations
to operate on each channel. 100-watt stations should be distributed 900 miles apart, permitting about seven to the channel. This arrangement will give each station the full service range that is practical.

Compromising with the ideal in order to provide for a greater number of stations, it is possible to permit 1,000-watt stations to operate on the same channel if they are kept about 1,800 miles apart; 500-watt stations, 1,200 miles apart; and 100-watt stations, 600 miles apart.

A further increase in the number of stations results in a decrease in the service range of all stations. Such a reduction is in reality bad economy when it is considered that a facility is being wasted by reason of interference. An increase in the number of stations operating on a given channel reduces the service range of each station on that channel to such an extent that the combined service area of all stations is much less than the service area of a single station.

Effect of Heterodyne Interference on Service Area.

A striking illustration may be given of the effect of heterodyne interference by taking an example of the 5,000-watt station operating at Chicago on an interference-free channel and comparing its service area when so operating with its service area when another station of 500 watts is operated in Los Angeles, a distance of 2,000 miles. The transmissions of the 5,000-watt station on a clear channel will cover 400 miles with a signal strength of five-tenths of a field intensity unit at this distance. A signal strength of this amount will give very satisfactory service in the rural districts. The same signal within a 100-mile radius of the station will be equal to two field intensity units. On this

basis the people in an area of half-a-million square miles will receive satisfactory service from this station. If, however, a station of 500 watts is permitted to operate on the same frequency in Los Angeles, the interference created reduces the service area of the Chicago station to 1,269
677 square miles. If the station in Los Angeles is increased from 500 to 5,000-watt power, the service area of the Chicago station will be reduced to a 15-mile radius representing a service area of 750 square miles.

678 Power of Two Stations Operating on the Same Channel Should be Equal.

If it is necessary to allow the operation of two stations on the same channel, the power of each station should be the same if services are to be provided to the macimum number of people under these circumstances. A 500-watt station on the same channel as a 5,000-watt station, so it is sound economy to increase the service area of the lower powered station by increasing its power to the equivalent power of the other station on the channel.

Low Power Produces Interference Over Large Areas.

The transmissions of a station of only 10 or 15-watt power will produce interference over a large area extending beyond the boundaries of any State in which that station is located.

Comparison of Areas Served by Stations on Cleared Channels and Areas Served by Many Stations Simultaneously on the Same Channels.

The areas that may be served by high-powered stations operating on clear channels when compared with the areas served by numerous stations of low power operating on one channel shows the use of clear channels to be more economical. If 50 stations of the power of 100 watts are scattered throughout the country on a single channel, each being 200 miles removed from any other station, an area of approximately 35,000 square miles will receive service from the entire number. A 5,000-watt station on a clear channel will serve an area of 500,000 square miles with a signal of one-half of an intensity unit, this permitting a better average grade of service than that rendered by the 100-watt stations.

This illustration furnishes a sound basis for the conclusion that every channel assigned to many small stations results in useless loss of service to many people.

It is not possible to serve the rural listeners of the United
States without providing a certain number of chan-
679 nels for stations of comparatively high power. Many
wide areas, sparsely populated, can not be reached
without the use of clear channels by stations having a power
of 5,000 watts or more.

It is recognized that in order to provide local service and local programs demanded by the public, it is necessary to establish channels for stations of moderate power, namely, of 1,000, 500 and 100 watts and assign stations on these channels with proper regard for geographic separation in order to minimize interference.

Interference from Stations on Adjoining Channels.

Another type of interference must be taken into consideration in assigning frequencies to stations in the same state or city. This interference results by reason of deficiencies of existing radio sets. A radio receiver of the sort used by most listeners, when tuned to a certain station, will receive not only the signals of that station but also the signals of other stations operating on adjacent channels, if the intensity of the signals of the latter stations are sufficiently strong. This is due to the fact that receivers do not select only a band of 10 kilocycles but receive frequencies on either side of this band. This broad selection is necessary in order that all frequencies in the 10-kilocycle channel may be received with approximately equal intensity.

Cross Talk.

If a person is located half-way between two stations, at such a distance that both can ordinarily be heard, and one station is 10 kilocycles removed from the other, it is possible to hear either one at will. If the receiving set is nearer one station this latter station gives a much stronger signal, and certain amount of cross talk will be apparent, i. e., in pauses in the program of the station having the

680 greatest signal strength at the particular point, the program of the station on the adjacent frequency will be heard with more or less distinctness. For this reason, two stations should not be permitted to operate in the same locality on adjoining frequencies.

If there is a separation of 20 kilocycles between stations, there is a very substantial ratio of signal intensities through which the weaker stations can be tuned in. If the selectivity of a receiver is increased to a high degree in order to exclude other frequencies the quality of the program is destroyed because such a receiver will also eliminate the higher notes and many of the harmonics of other notes coming from the station to which it is tuned.

Due to characteristics of receivers a signal of low power will be heard over only a small portion of the dial while a signal of greater power will be heard over a corresponding greater portion of the dial. The strength of the signal that is being received affects receiver selectivity and, therefore, a more powerful signal appears over a larger portion of the dial than a weaker signal.

On cross examination this witness was asked how his formulas with respect to service areas and nuisance areas were derived and the following reply was made: "We have an empirical formula which is based upon work, first done by Hertz and which has since been conducted by many investigators, probably hundreds in number. It is not a theoretical formula but is a practical formula, which relates to observations that have been made over literally thousands upon thousands of measurements. It is based upon that, and it is the best general relation the engineers have been able to obtain. It does not purport to cover every case because of the variations that I have spoken about, but it does purport to be and is so far as I know the best relation which can be stated generally."

681 Testimony of Dr. J. H. Dellinger.

A synopsis of the testimony of Dr. J. H. Dellinger, for twenty-one years a physicist at the Bureau of Standards in the Department of Commerce and now Chief of the Radio Section of the Bureau of Standards, and Chief Engineer of the Federal Radio Commission, follows:

Doctor Dellinger testified that he was present while the testimony of John V. L. Hogan was being given; that the approximate figures given by Hogan with reference to signal strength of stations, the creation of nuisance areas, etc., are correct; that he had cooperated with Hogan in the calculation of these figures; that they apply to night time reception during the principal radio months of the year; and in all other cases the distances are not so great; that the figures are conservative in that they give minimum distances, (pp. 108-110); that the comparative areas served by stations of various power as given by Hogan are correct (p. 111).

The formulas relative to distances and signal intensity are operative under good conditions, i. e., at times when a signal goes out without material energy absorption. At all other times there is a great absorption and the distances reached by stations distant are less than the values given (p. 113).

The results that would follow the operation of a 500-watt station at Los Angeles and a 5,000-watt station in Chicago using the same assigned frequency would be a heterodyne interference in the range of both stations of sufficiently great order that the interference produced thereby would be appreciable in a considerable part of the service area that each station would otherwise have if no other station were on the same frequency. There would be a considerable area around each station which would receive satisfactory service, such area being less than it would be if there were no heterodyne interference. There would be a greater area given actual service by one station than by both.

682 Smaller stations can furnish a service to a very restricted area around them, even though the same frequency is assigned to many other stations throughout the country. Unquestionably, there are numerous cases where their service over that small area is of value. The possibilities of furnishing such service without destructive interference were fairly clearly indicated in the engineers' report which has already been placed before the Commission.

If two stations of 5,000-watts each operate at the same time on the same channel, one in New York and one in Los Angeles, then a farmer in Nebraska with a good receiving set may at times hear one station, when its transmission comes in with sufficient intensity, if the signals of the other stations are absent because of different transmission conditions existing between the listener and the latter station. The heterodyne distance range of a station is about thirty times its service area if its service area is considered as that area covered by a signal intensity of two millivots per meter (two field intensity units).

The ratio of heterodyne interference distance to signal distance is not increased by an increase in power if the stations responsible for the heterodyne are all increased by the same factor.

There appears to be no promising means of increasing service area other than increasing power or diminishing heterodyne interference unless it is possible to accompany this by the synchronization of stations or the delivery of more intense signals by improving the modulation (p. 134).

A greater area is served by one 50,000-watt station than by the aggregate number of small stations with the same total power (p. 137).

Testimony of C. M. Jansky, Jr.

This witness is Associate Professor of Radio Engineering of the University of Minnesota and a Consulting Engineer, having acted in the latter capacity for such organizations as the U. S. Bureau of Standards, the U. S.
683 Signal Corps, the Geophysical Research Corporation, and others.

The witness states that he was present during the time the testimony of the witness Hogan was being given and that the testimony as to the approximate extent of various types of service areas and nuisance areas with reference to stations of different amounts of power, were the results of calculations in which he had cooperated, and which are correct as approximations.

The width of a channel occupied by radio broadcasting stations is definitely determined by the highest modulated frequency present in the program being broadcast, assuming that the transmitter is designed to handle this frequency. The range of frequencies necessary in order that there may be a faithful reproduction of a program depends upon the range of frequencies to which the ear will respond and this varies with individuals but may be said to extend from 30 cycles per second to possibly some figure well above 10,000 cycles.

Transmission systems designed for the reproduction of high grade musical programs should be designed to accommodate modulating frequencies of at least 8,000 cycles. Broadcasting stations so designed would occupy channels 16,000 cycles wide. On this basis there would be approximately 60 channels available between 550 and 1,500 kilocycles. It has been found, however, that limiting the transmission system to modulating frequencies which do not exceed 5,000 cycles is a workable arrangement although it does not provide for as faithful reproducton as would be desirable. If broadcasting stations are so designed that only frequencies below 5,000 cycles are transmitted then the width *of* occupancy by each station will be 10,000 cycles and the frequency channel separation between carriers could be made 10,000 cycles.

On the basis of a 10,000-cycle separation between carrier frequencies there are 96 broadcast channels available between 550 and 1,500 kilocycles assuming the terminal frequencies to be used as carriers.

684 Based on studies made by witness in mid-western States, namely, North Dakota, South Dakota, and Minnesota, approximately 60 per cent of the receiving sets in this area are outside the daylight service area of broadcasting stations. This means that the owners of these sets will rely entirely upon the night-time programs and that these are obtainable from stations several hundred to a thousand miles distant.

Under these conditions the assignment of several stations on the same channel for simultaneous operation is likely to completely destroy for 60 per cent of the population mentioned above the benefits of broadcasting service, this being due to the heterodyne interference caused by the operation of the two stations. So far the physical limitations which do not permit the existence at one location of stations using adjacent frequencies are fundamentally due to the characteristics of the radio receiving sets as they are built today. These sets are particularly sensitive to the frequencies for which they are tuned. Thus a set tuned to the frequency of 990 kilocycles receives a signal of that frequency at its maximum strength. For frequencies on either side the sensitivity of the receiver falls off rapidly. Since broadcasting programs require the reception of a band of 10,000 frequencies (10 kilocycles), it is apparent that a very selective set will not respond with the same sensitiveness to all the frequencies in this band. This fact is shown graphically by the middle figure of the following chart.

In order to secure a faithful reproduction of the progress, it is, therefore, necessary to broaden the set, the effect of this being to admit all those frequencies in the ten-kilocycle band above referred to, without appreciable loss of power. The effect of thus broadening the receiving set leads to undesirable results for the reason that transmissions of stations occupying adjacent channels are admitted. These transmissions on either side of the particular band to which the receiver is tuned may have sufficient strength to completely destroy the signal of the station to which the receiver is tuned. (See bottom figure in chart in-
685 dicating reception of transmissions 40 kilocycles removed from frequency desired.)

As is shown by the top figure on the chart the ideal receiver excludes all frequencies except those within the ten-kilocycle band and admits all frequencies within that band with equal intensity.

686 The location of a station in a city, even though it may not be powerful, is bound to produce a relatively high field intensity close to it. This field intensity will produce interference with receiving sets which are tuned to channels adjacent to that of the interfering station. The distance of the transmitter from the receiving set is a more important factor in determining field intensity than power; and listeners in a city will receive interference when operating their receiving sets on adjacent channels to a greater extent than they would if the stations were not high-powered and located outside the city. A station will produce excessively strong signals in its immediate vicinity even though it may be of relatively low power. These signals are objectionable to listeners near the station for the reasons given above.

Addition to record per Stipulation of Counsel.

D. D. HUGHES,
Atty. for Fed. Radio Com.
GODFREY L. MUNTER,
Atty. for Appellant.

687 [Endorsed:] No. 4835. Technical Radio Laboratory, a Corporation, Appellant, vs. Federal Radio Commission. Addition to Record per Stipulation of Counsel. Court of Appeals, District of Columbia. Filed Jan. 15, 1929. Henry W. Hodges, Clerk.

688 In the Court of Appeals of the District of Columbia.

No. 4835.

Radio Commission No. 4835.

Technical Radio Laboratory, a Corporation, Operating Station WTRL, Applicant-Appellant,

vs.

The Federal Radio Commission, Appellee.

Final Designation of Record and Stipulation.

It is hereby stipulated between the attorneys for the respective parties herein that the following designation of record shall be binding upon both parties, subject to the exceptions and objections therein noted:

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1. Notice of Appeal and Reasons therefore	1– 4
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5. Application *of* License	24– 25
6. License of December 18, 1926	27
7. Application for renewal, January 16, 1928	44– 47
8. Notice of hearing, May 25, 1928	53
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9. Order of Commission denying license	55
10. Letter of Commission to Harry Green, December 5, 1927, objected to by appellant as being irrelevant, immaterial and incompetent	82
11. Answer of Green to Commission of December 7, 1927, objected to by appellant on same grounds	83
12. Transcript of testimony	113–158
13. Transcript of testimony	161–216
14. Press Release. (Applicant's Exhibit No. 1)	402
15. Affidavit of Hogencamp, July 10, 1928	415–417
689 16. Affidavit of D. W. May, July 9, 1928	418–421
17. Affidavit of Hogencamp, July 17, 1928, with Exhibits, objected to by appellee as to 461-466	456–466
18. Letter to Department of Commerce, objected to by appellant as immaterial, irrelevant and incompetent	467
19. List of Stations and Zones, objected to by appellant on same grounds	530–531
20. List of Stations in New Jersey, objected to by appellant on same grounds	539–540
21. List of Stations in New York, objected to by appellant on same grounds	541–543
22. Summary of Engineering testimony objected to by appellant on same grounds	665–686
23. This Designation and Stipulation	688–689

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Jan. 15, 1929.

690 [Endorsed:] No. 4835. Technical Radio Laboratory, a Corporation, Operating Station WTRL, Applicant-Appellant, vs. The Federal Radio Commission, Appellee. Final Designation of Record and Stipulation. Godfrey L. Munter, Attorney and Counsellor at Law, Washington, D. C., Mills Building. Main 1390. Court of Appeals, District of Columbia. Filed Jan. 15, 1929. Henry W. Hodges, Clerk.